TOETHO" T2E2E260

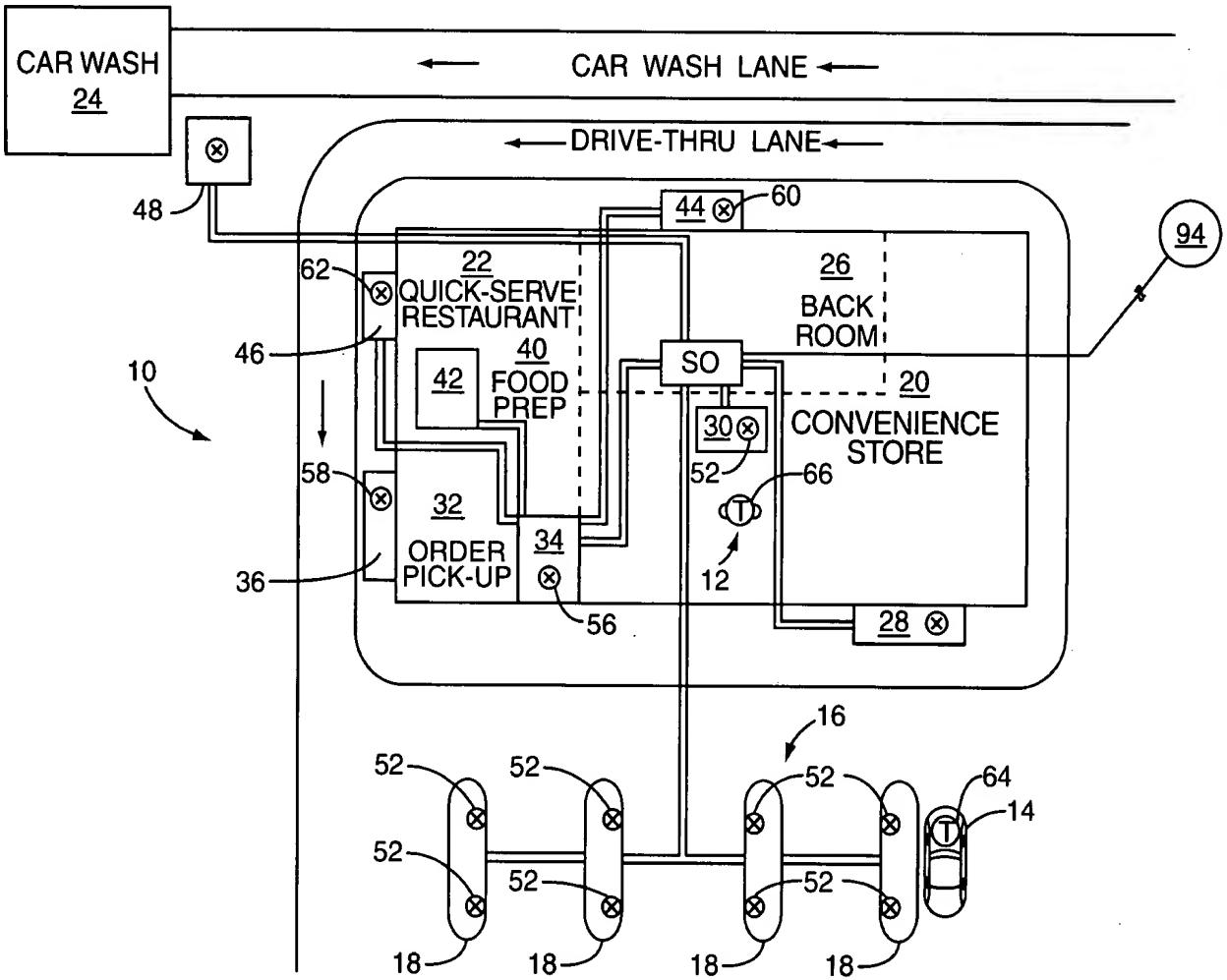


*FIG. 1*

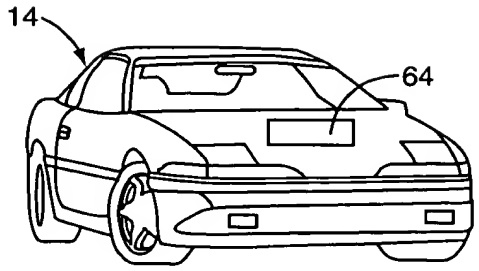


FIG. 2A

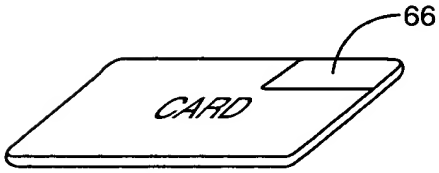


FIG. 2B

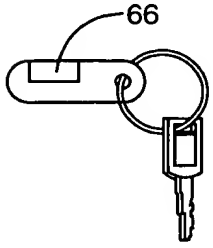


FIG. 2C

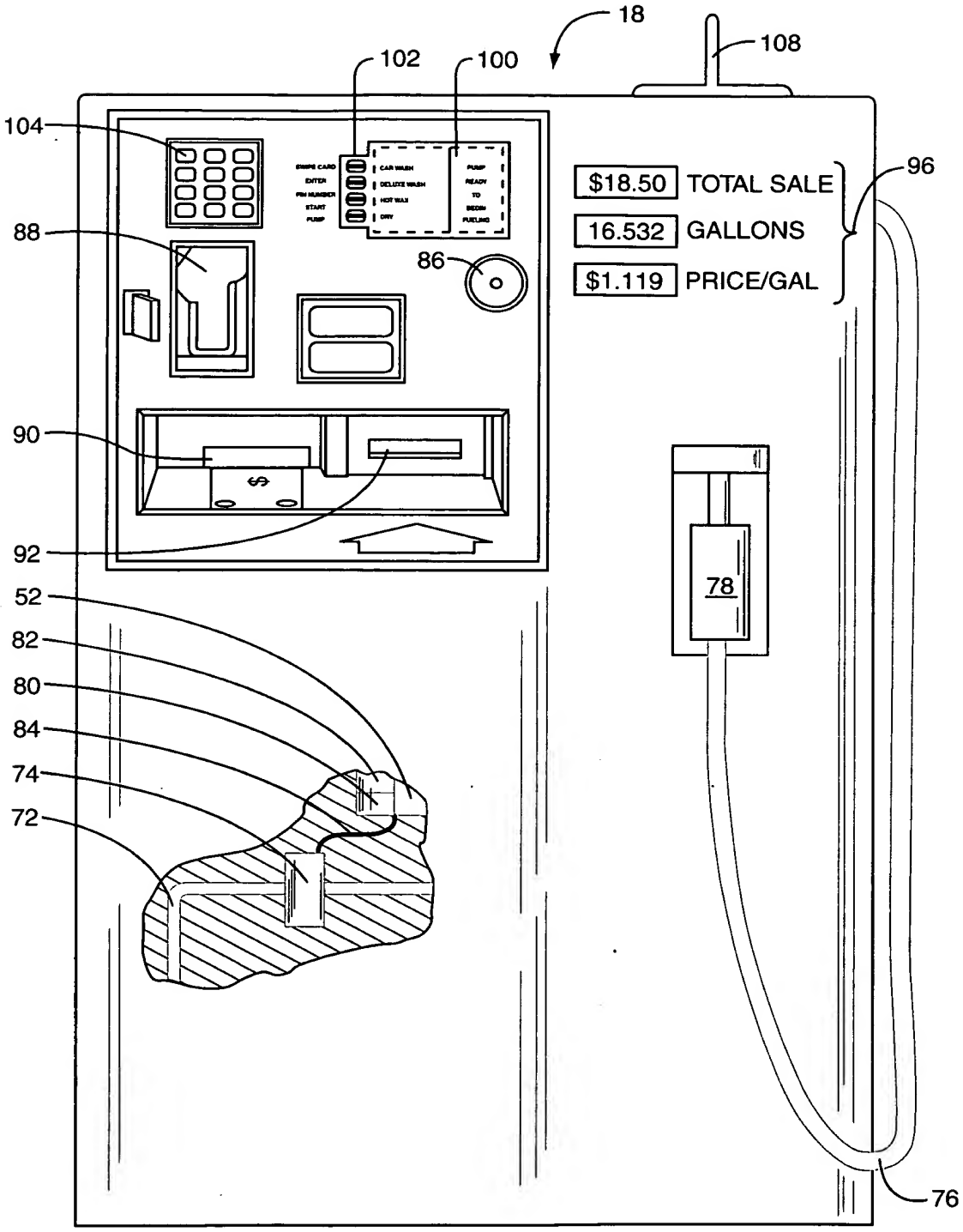
18
102
100
108
104
88
86
90
92
52
82
80
84
74
72
$18.50 TOTAL SALE
16.532 GALLONS
$1.119 PRICE/GAL
96
78
76

FIG. 3

TOETHO "T2626O

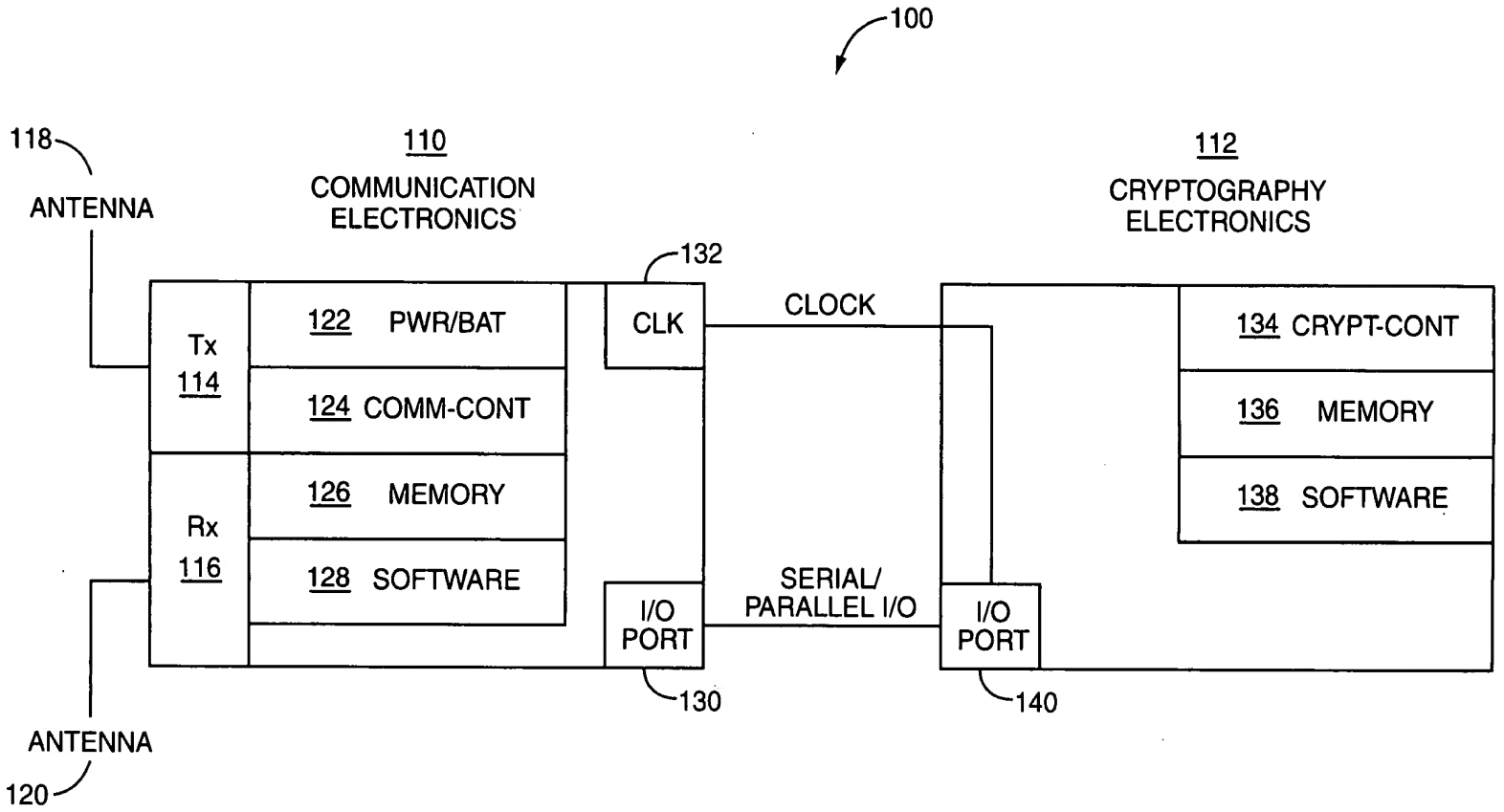


*FIG. 4A*

TOETHO" T2EZE260

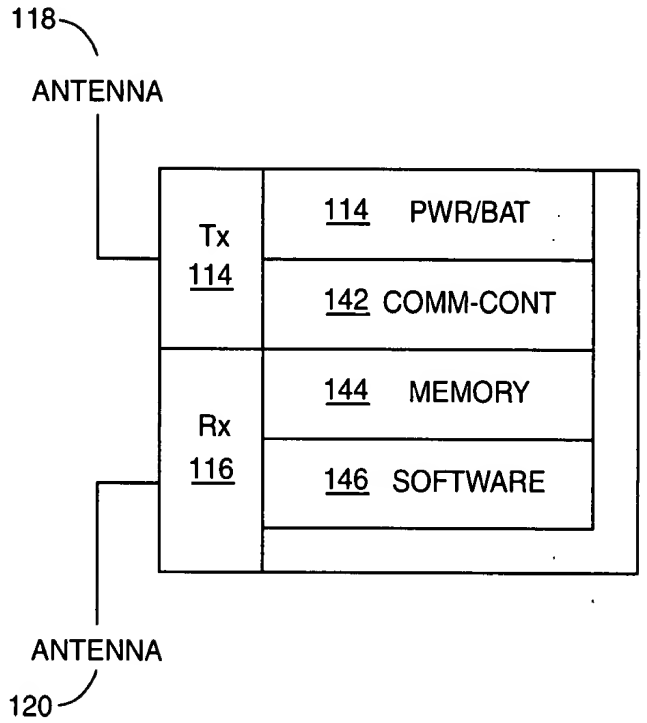


*FIG. 4B*

DISPENSER ELECTRONICS
AUDIO PROCESSOR 260
MIC 258
PRINTER 92
CENTRAL SITE CONTROL INTERFACE 146
CARD READER 88
CASH ACCEPTOR 90
108
108
KEYPAD 102
Rx 142
DISPENSER CONTROLLER 80
DISPLAY 100
Tx 144
AUDIO/VIDEO ELECTRONICS
INTERROGATOR
254
52
86
MEMORY 82
AUX. A/V SOURCE 156
THUMB PRINT IMAGER 264
CAMERA 262

*FIG. 5*

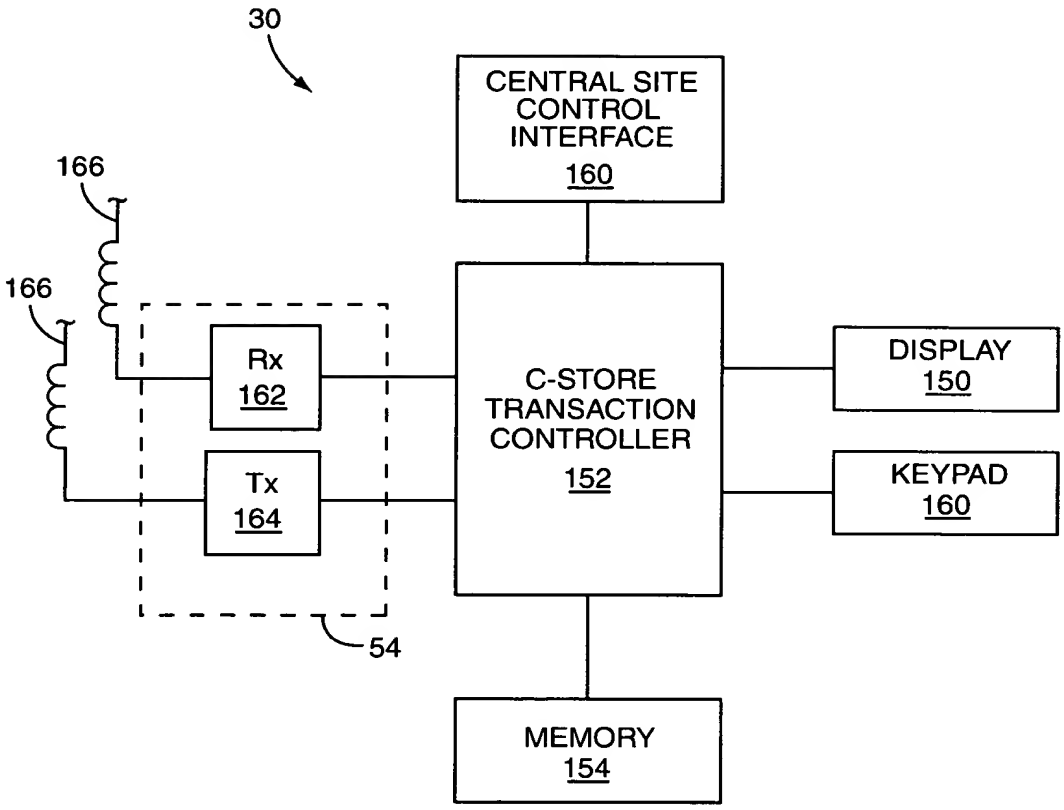
30
CENTRAL SITE CONTROL INTERFACE 160
166
166
Rx 162
Tx 164
C-STORE TRANSACTION CONTROLLER 152
DISPLAY 150
KEYPAD 160
54
MEMORY 154

*FIG. 6*

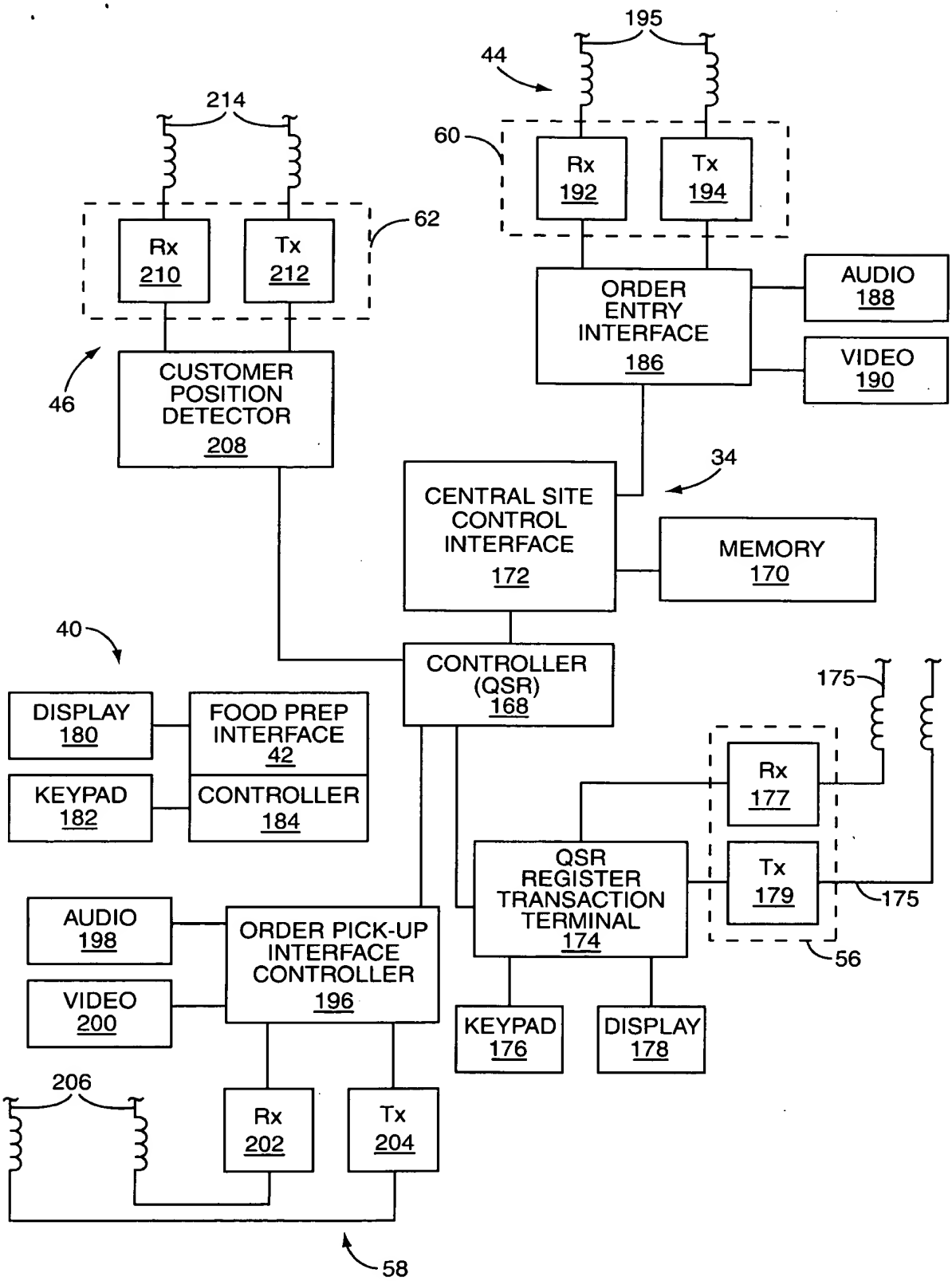
195
44
214
60
Rx
192
Tx
194
Rx
210
Tx
212
62
AUDIO
188
ORDER
ENTRY
INTERFACE
186
VIDEO
190
46
CUSTOMER
POSITION
DETECTOR
208
34
CENTRAL SITE
CONTROL
INTERFACE
172
MEMORY
170
40
CONTROLLER
(QSR)
168
175
DISPLAY
180
FOOD PREP
INTERFACE
42
Rx
177
KEYPAD
182
CONTROLLER
184
QSR
REGISTER
TRANSACTION
TERMINAL
174
Tx
179
175
AUDIO
198
ORDER PICK-UP
INTERFACE
CONTROLLER
196
56
VIDEO
200
KEYPAD
176
DISPLAY
178
206
Rx
202
Tx
204
58

*FIG. 7*

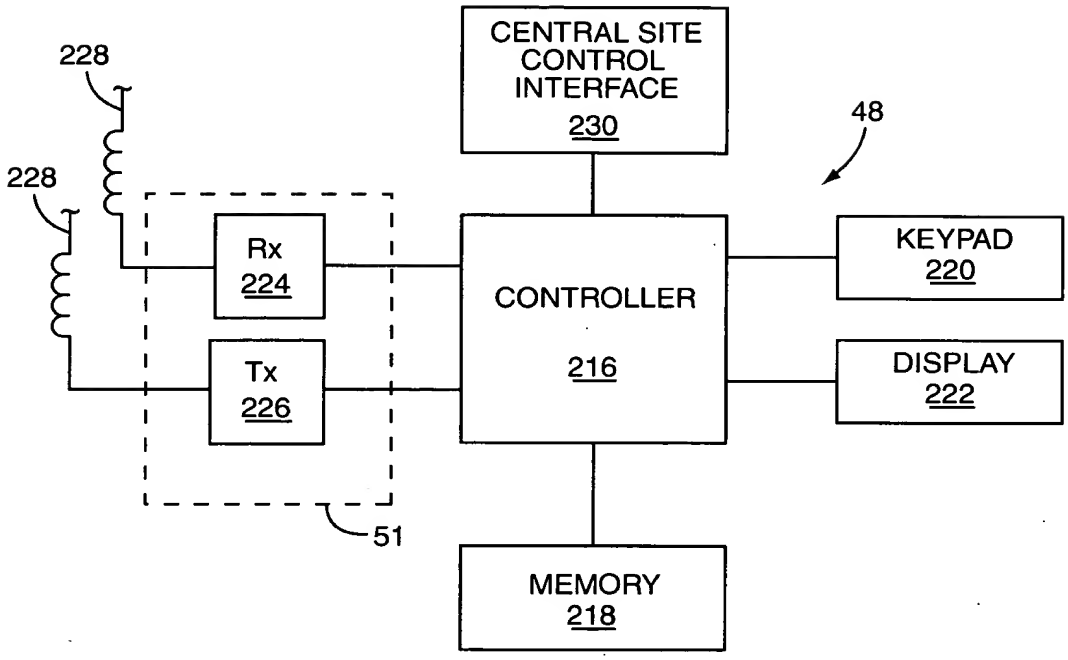
CENTRAL SITE CONTROL INTERFACE 230
48
228
228
Rx 224
Tx 226
CONTROLLER 216
KEYPAD 220
DISPLAY 222
51
MEMORY 218

*FIG. 8*

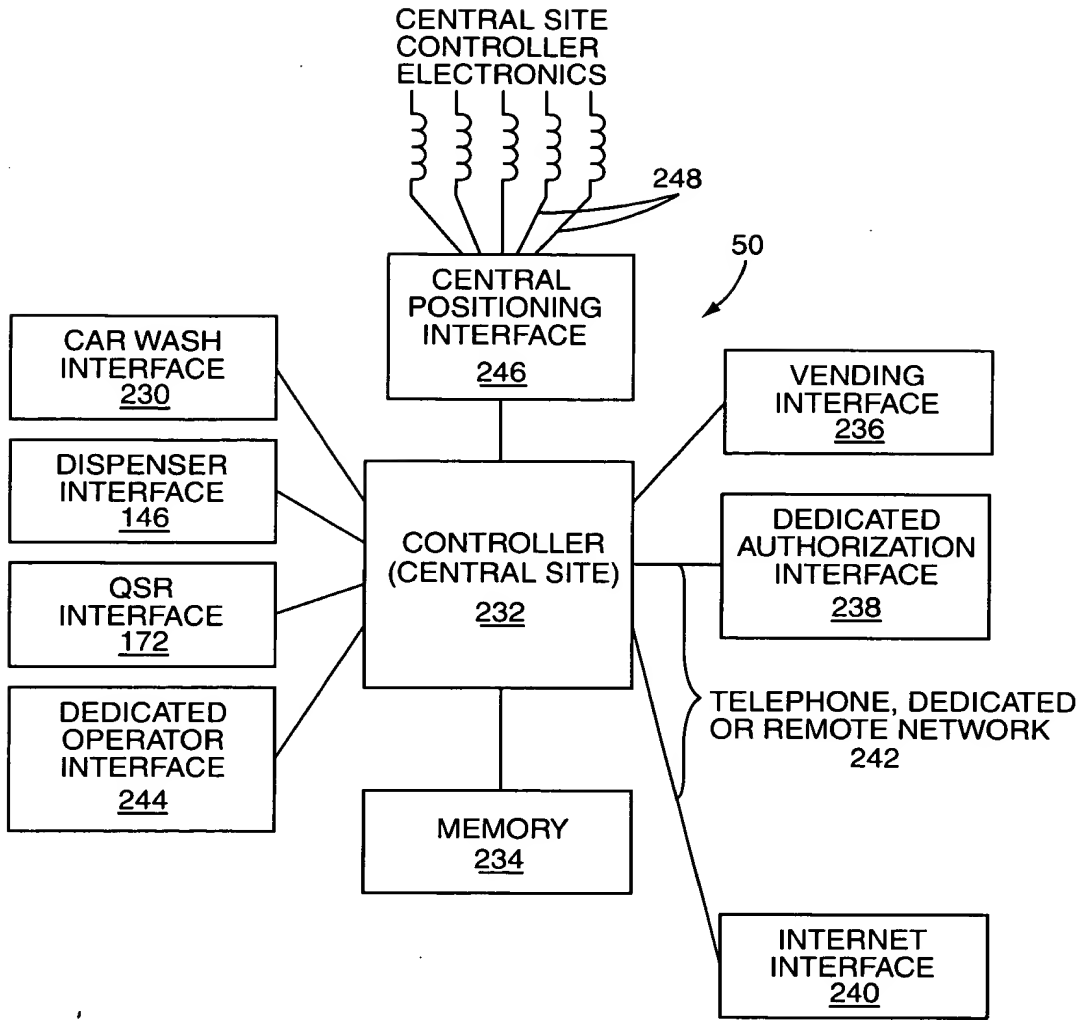
CENTRAL SITE CONTROLLER ELECTRONICS
248
50
CENTRAL POSITIONING INTERFACE 246
CAR WASH INTERFACE 230
DISPENSER INTERFACE 146
QSR INTERFACE 172
DEDICATED OPERATOR INTERFACE 244
CONTROLLER (CENTRAL SITE) 232
MEMORY 234
VENDING INTERFACE 236
DEDICATED AUTHORIZATION INTERFACE 238
TELEPHONE, DEDICATED OR REMOTE NETWORK 242
INTERNET INTERFACE 240

*FIG. 9*

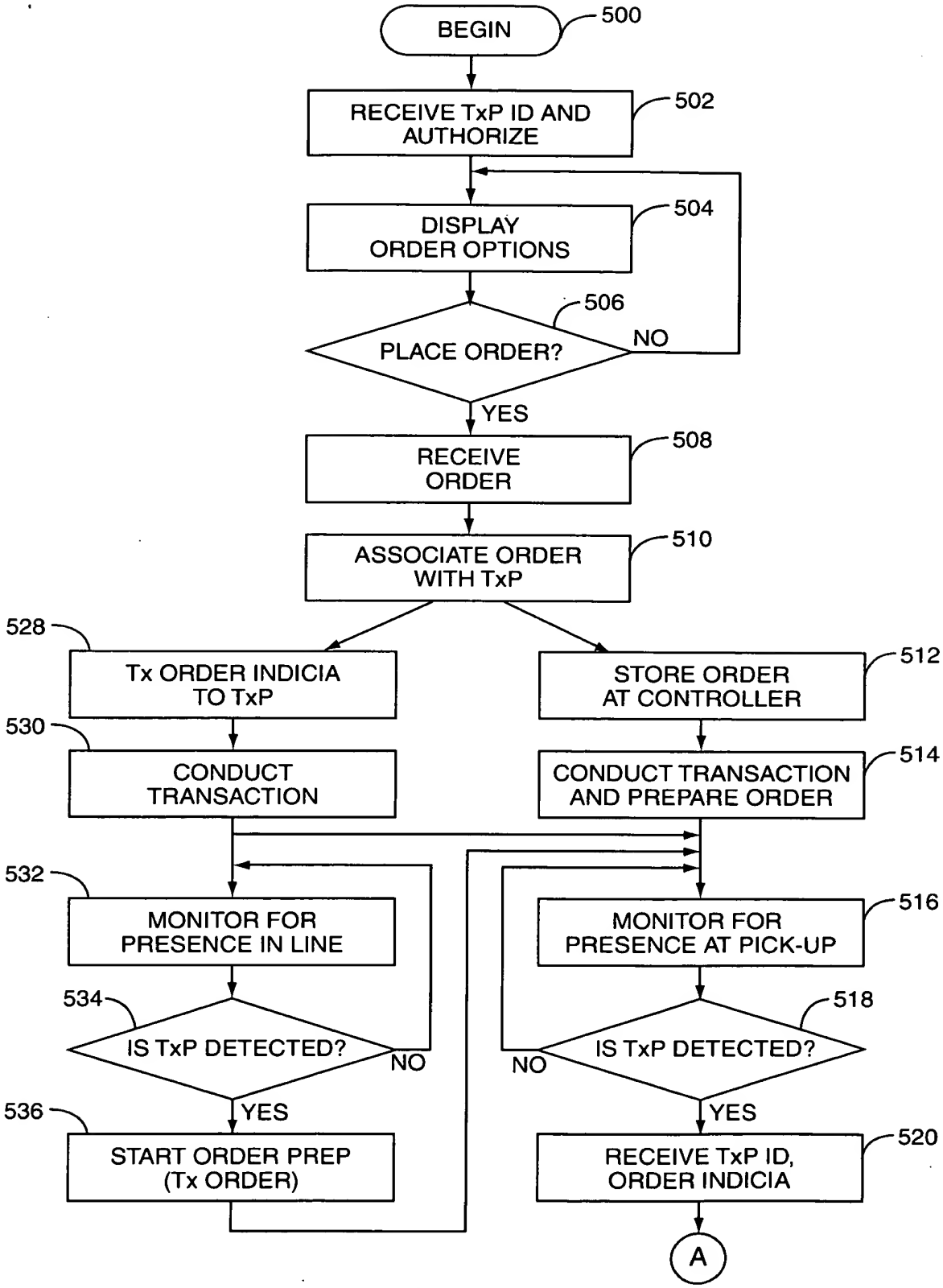
BEGIN
500
RECEIVE TxP ID AND AUTHORIZE
502
DISPLAY ORDER OPTIONS
504
PLACE ORDER?
506
NO
YES
RECEIVE ORDER
508
ASSOCIATE ORDER WITH TxP
510
528
Tx ORDER INDICIA TO TxP
530
CONDUCT TRANSACTION
532
MONITOR FOR PRESENCE IN LINE
534
IS TxP DETECTED?
NO
YES
536
START ORDER PREP (Tx ORDER)
STORE ORDER AT CONTROLLER
512
CONDUCT TRANSACTION AND PREPARE ORDER
514
MONITOR FOR PRESENCE AT PICK-UP
516
518
IS TxP DETECTED?
NO
YES
RECEIVE TxP ID, ORDER INDICIA
520
A

*FIG. 10A*

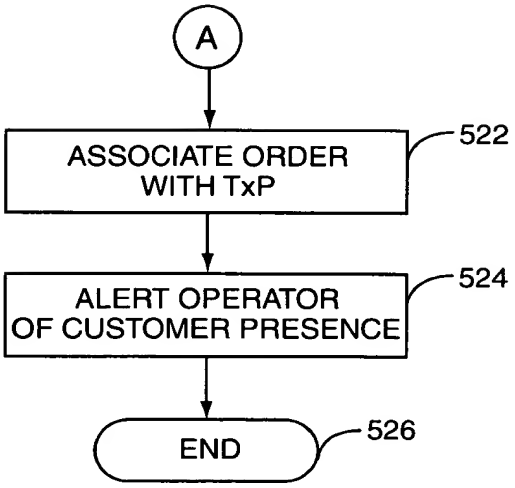
A
ASSOCIATE ORDER WITH TxP
522
ALERT OPERATOR OF CUSTOMER PRESENCE
524
END
526

*FIG. 10B*

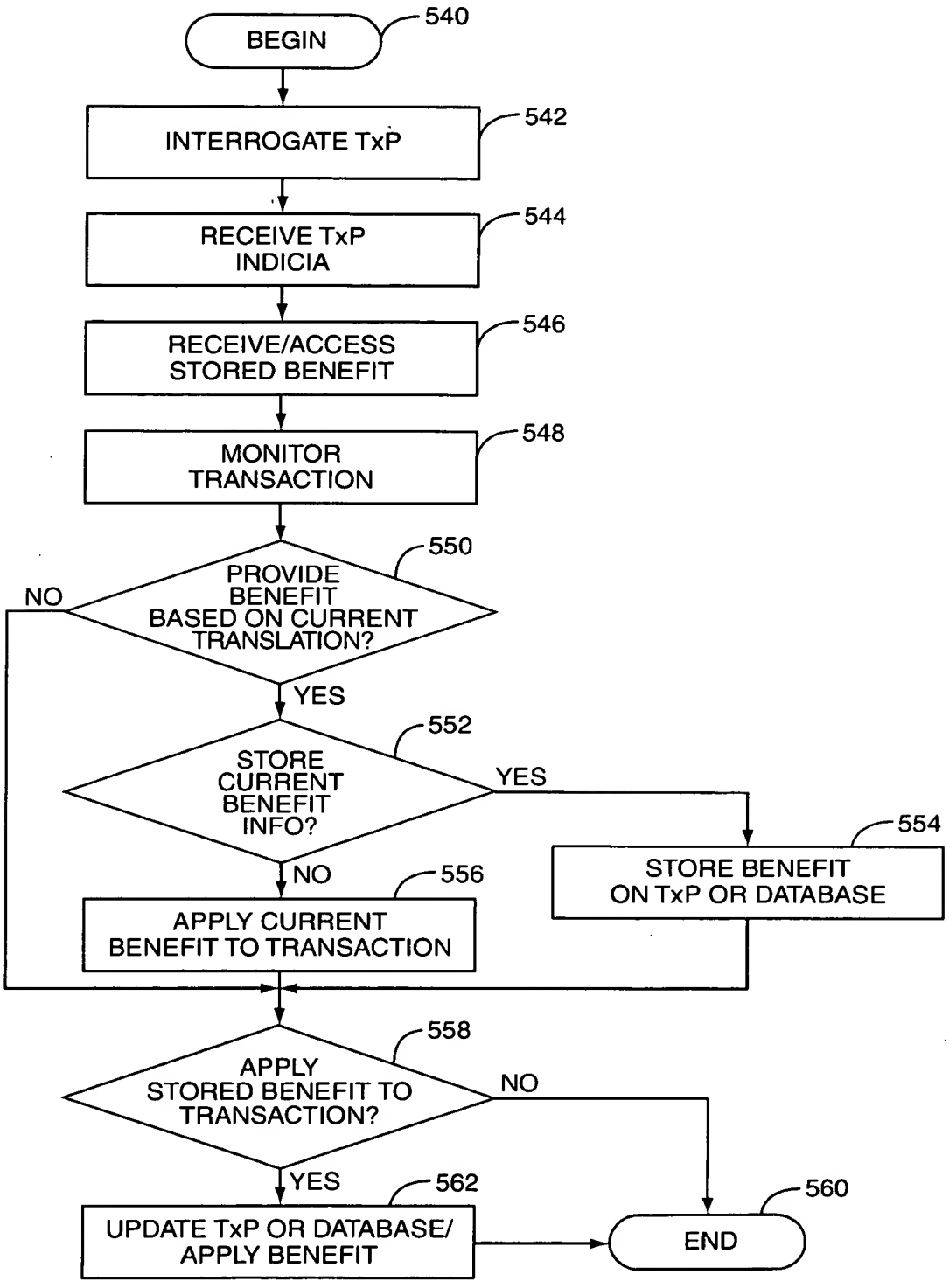
BEGIN
540
INTERROGATE TxP
542
RECEIVE TxP INDICIA
544
RECEIVE/ACCESS STORED BENEFIT
546
MONITOR TRANSACTION
548
PROVIDE BENEFIT BASED ON CURRENT TRANSLATION?
550
NO
YES
STORE CURRENT BENEFIT INFO?
552
YES
NO
STORE BENEFIT ON TxP OR DATABASE
554
APPLY CURRENT BENEFIT TO TRANSACTION
556
APPLY STORED BENEFIT TO TRANSACTION?
558
NO
YES
UPDATE TxP OR DATABASE/ APPLY BENEFIT
562
END
560

*FIG. 10C*

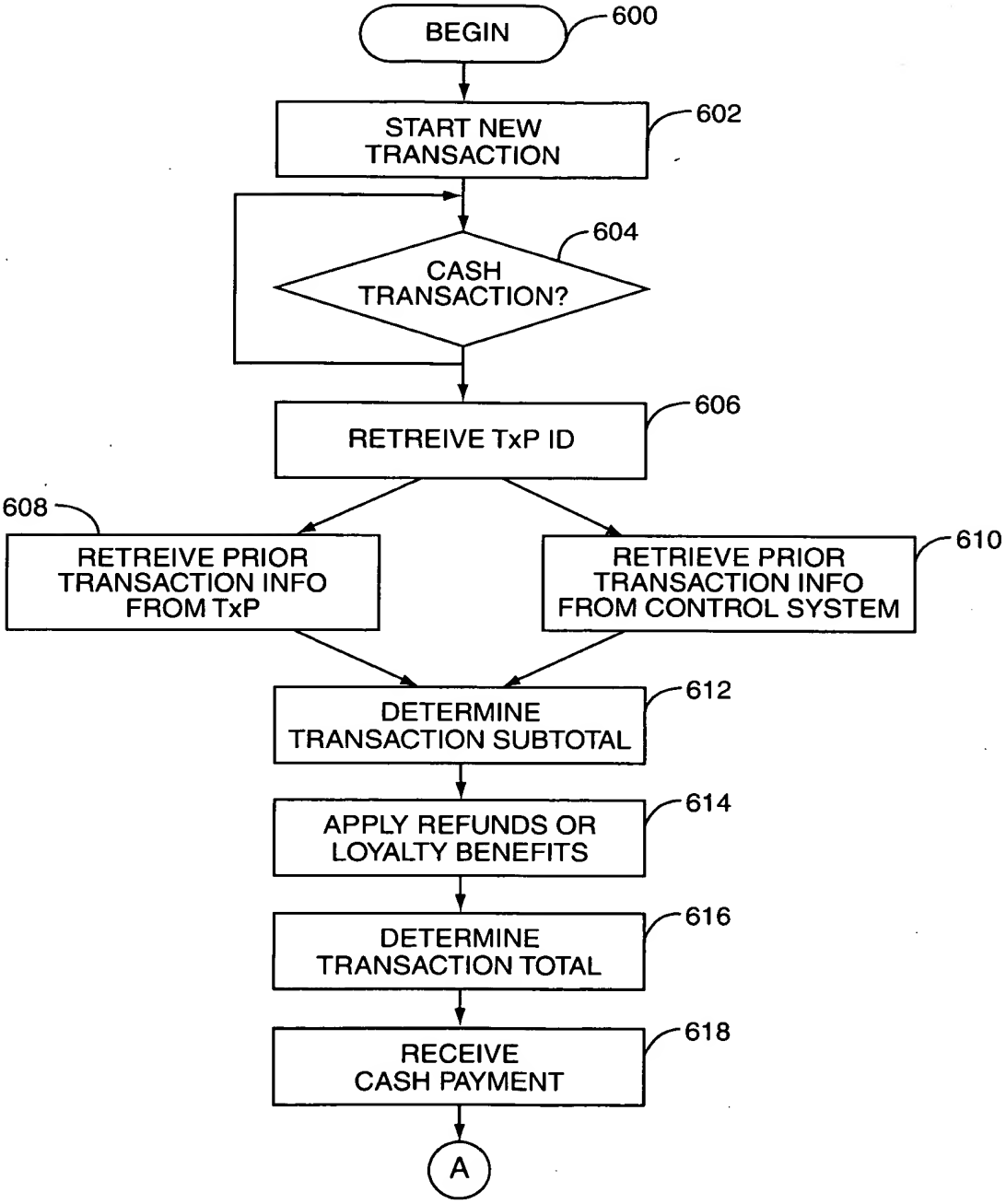
BEGIN
600
START NEW TRANSACTION
602
CASH TRANSACTION?
604
RETREIVE TxP ID
606
608
RETREIVE PRIOR TRANSACTION INFO FROM TxP
RETRIEVE PRIOR TRANSACTION INFO FROM CONTROL SYSTEM
610
DETERMINE TRANSACTION SUBTOTAL
612
APPLY REFUNDS OR LOYALTY BENEFITS
614
DETERMINE TRANSACTION TOTAL
616
RECEIVE CASH PAYMENT
618
A

*FIG. 11A*

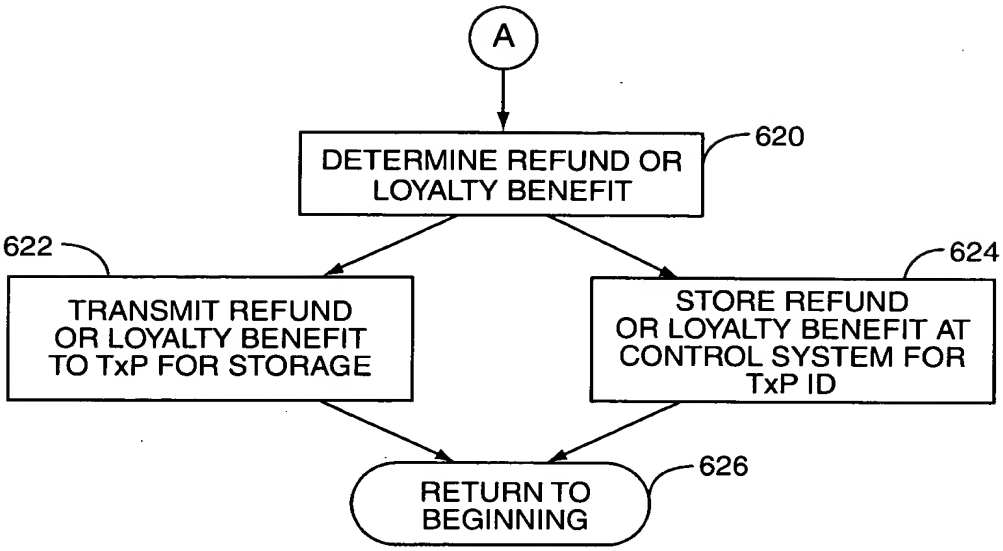
A
DETERMINE REFUND OR LOYALTY BENEFIT
620
622
TRANSMIT REFUND OR LOYALTY BENEFIT TO TxP FOR STORAGE
624
STORE REFUND OR LOYALTY BENEFIT AT CONTROL SYSTEM FOR TxP ID
RETURN TO BEGINNING
626

*FIG. 11B*

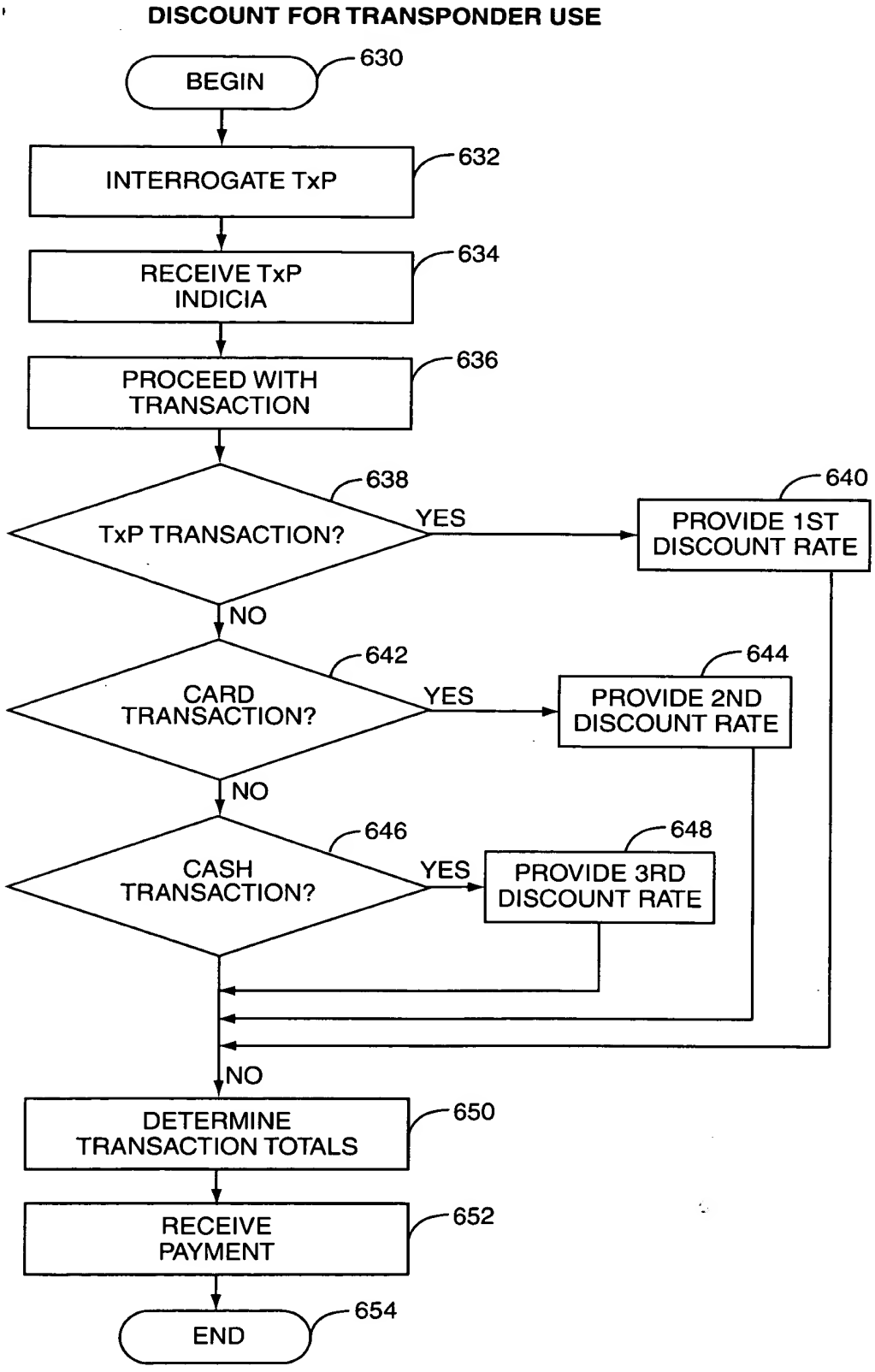
DISCOUNT FOR TRANSPONDER USE
BEGIN
630
INTERROGATE TxP
632
RECEIVE TxP INDICIA
634
PROCEED WITH TRANSACTION
636
TxP TRANSACTION?
638
YES
PROVIDE 1ST DISCOUNT RATE
640
NO
CARD TRANSACTION?
642
YES
PROVIDE 2ND DISCOUNT RATE
644
NO
CASH TRANSACTION?
646
YES
PROVIDE 3RD DISCOUNT RATE
648
NO
DETERMINE TRANSACTION TOTALS
650
RECEIVE PAYMENT
652
END
654

*FIG. 11C*

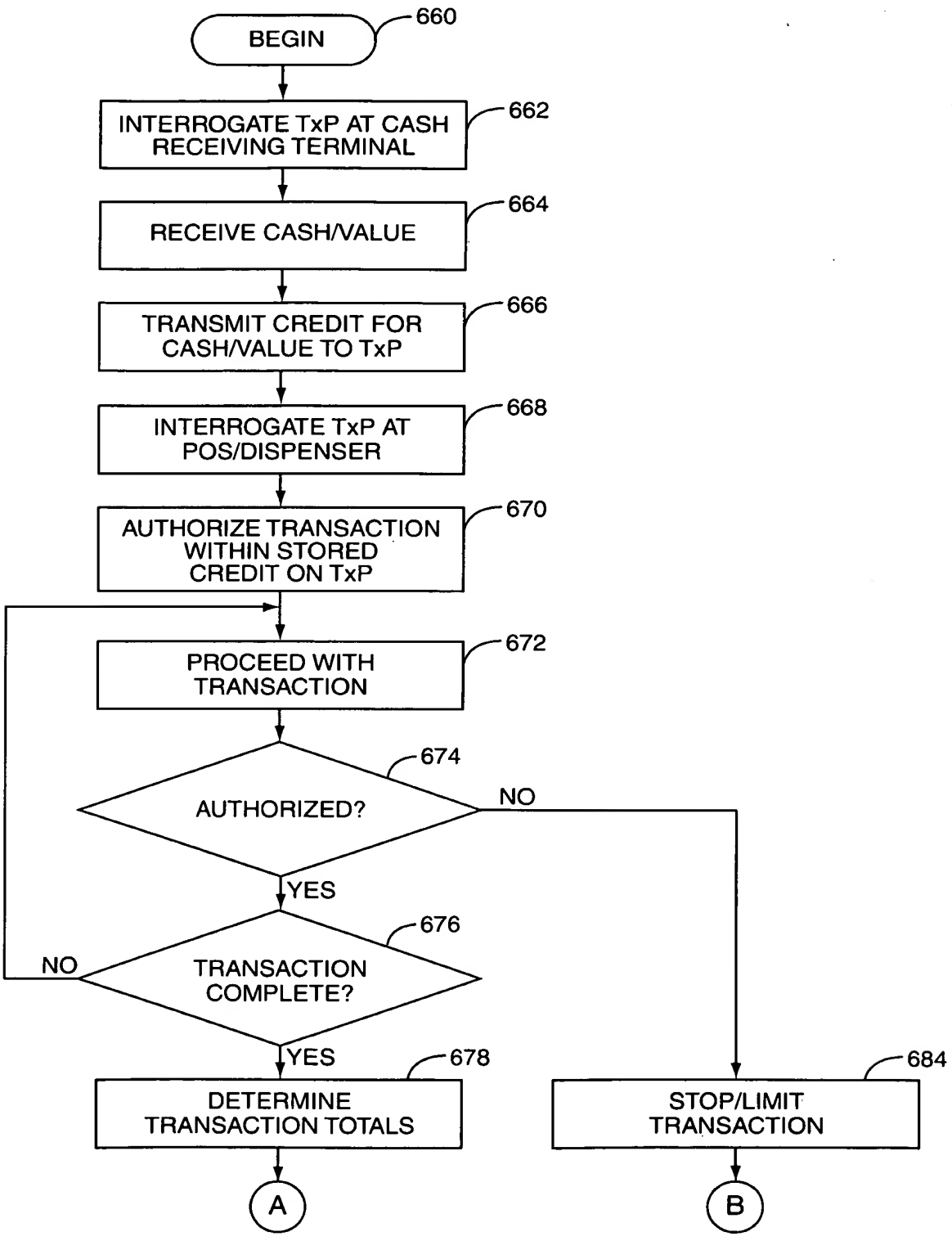
CASH PREPAY WITH TxP
BEGIN
660
INTERROGATE TxP AT CASH RECEIVING TERMINAL
662
RECEIVE CASH/VALUE
664
TRANSMIT CREDIT FOR CASH/VALUE TO TxP
666
INTERROGATE TxP AT POS/DISPENSER
668
AUTHORIZE TRANSACTION WITHIN STORED CREDIT ON TxP
670
PROCEED WITH TRANSACTION
672
AUTHORIZED?
674
NO
YES
TRANSACTION COMPLETE?
676
NO
YES
DETERMINE TRANSACTION TOTALS
678
STOP/LIMIT TRANSACTION
684
A
B

*FIG. 11D*

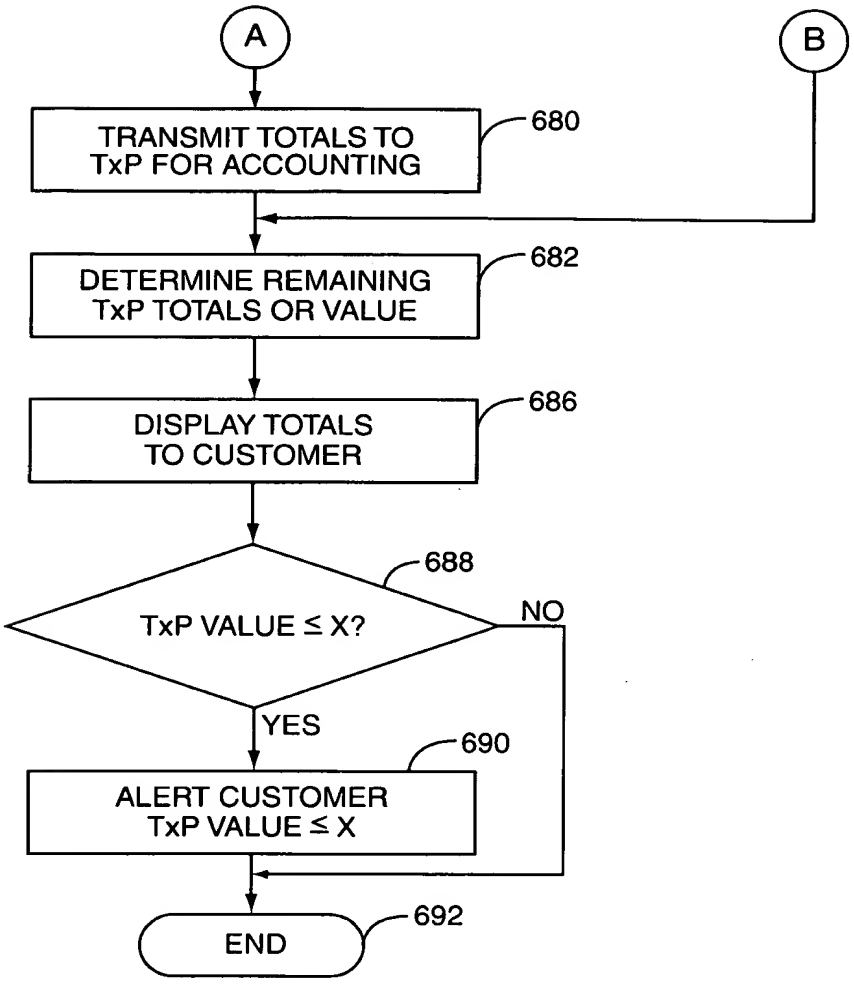
A
B
TRANSMIT TOTALS TO TxP FOR ACCOUNTING
680
DETERMINE REMAINING TxP TOTALS OR VALUE
682
DISPLAY TOTALS TO CUSTOMER
686
TxP VALUE ≤ X?
688
NO
YES
ALERT CUSTOMER TxP VALUE ≤ X
690
END
692

*FIG. 11E*

TOETHO" T2E2E60

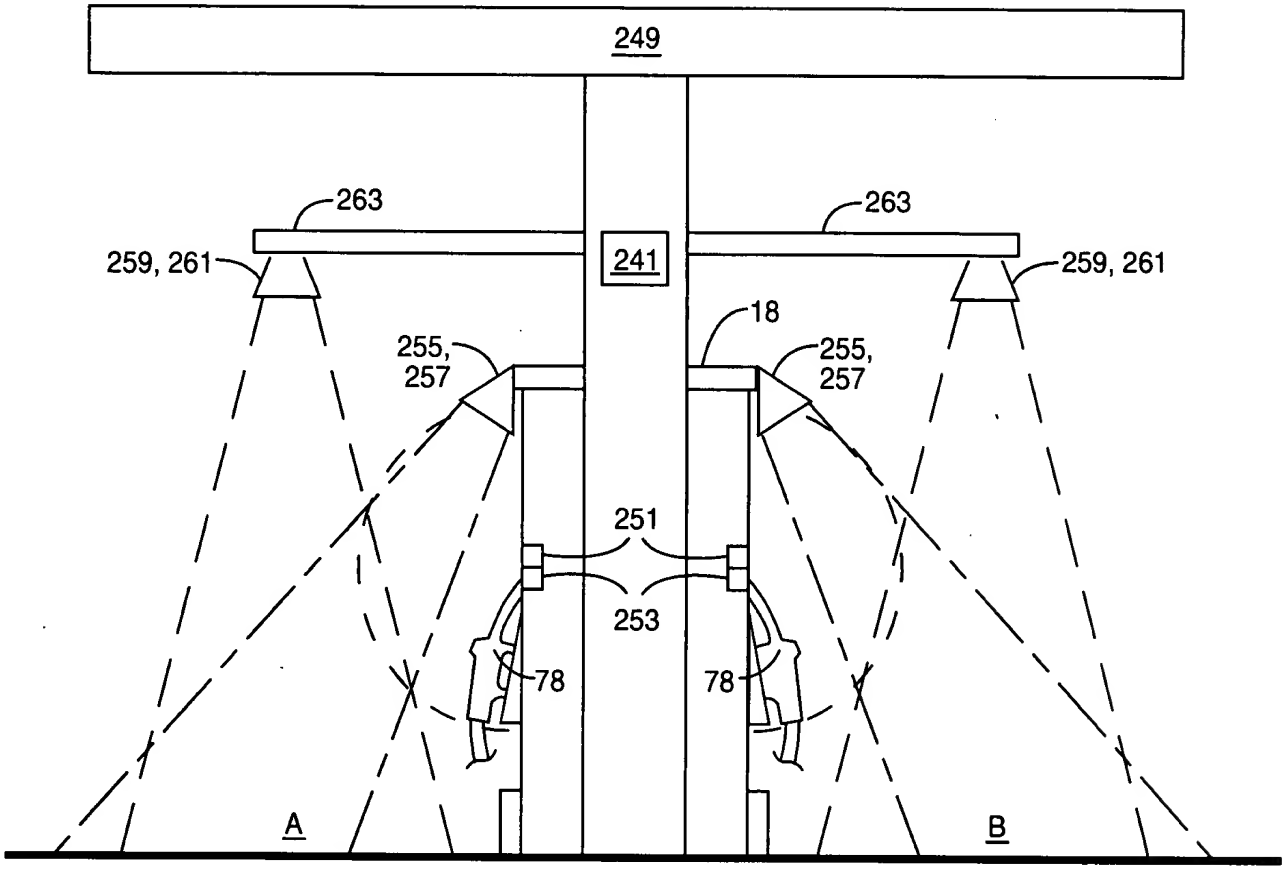


*FIG. 12A*

TOETHO: T2E/E260

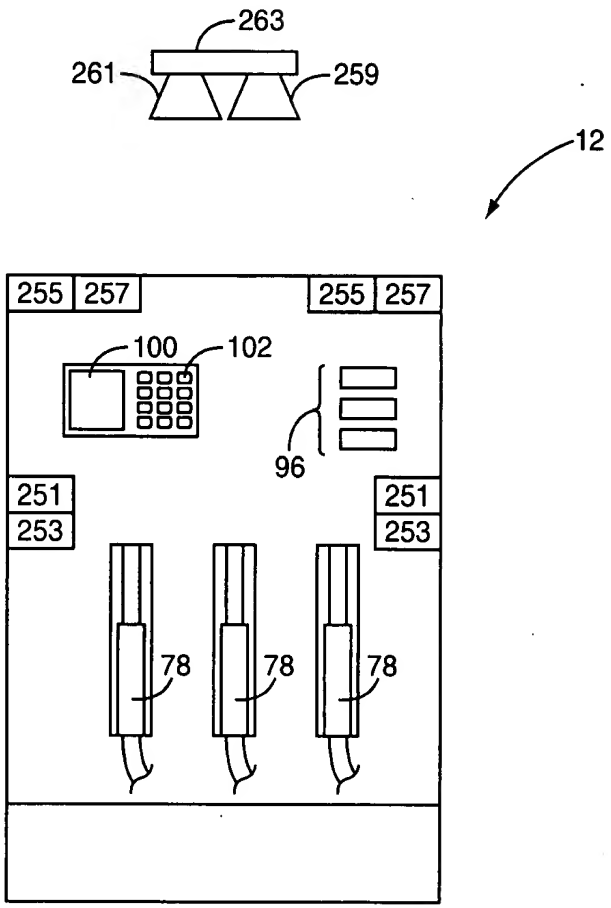


*FIG. 12B*

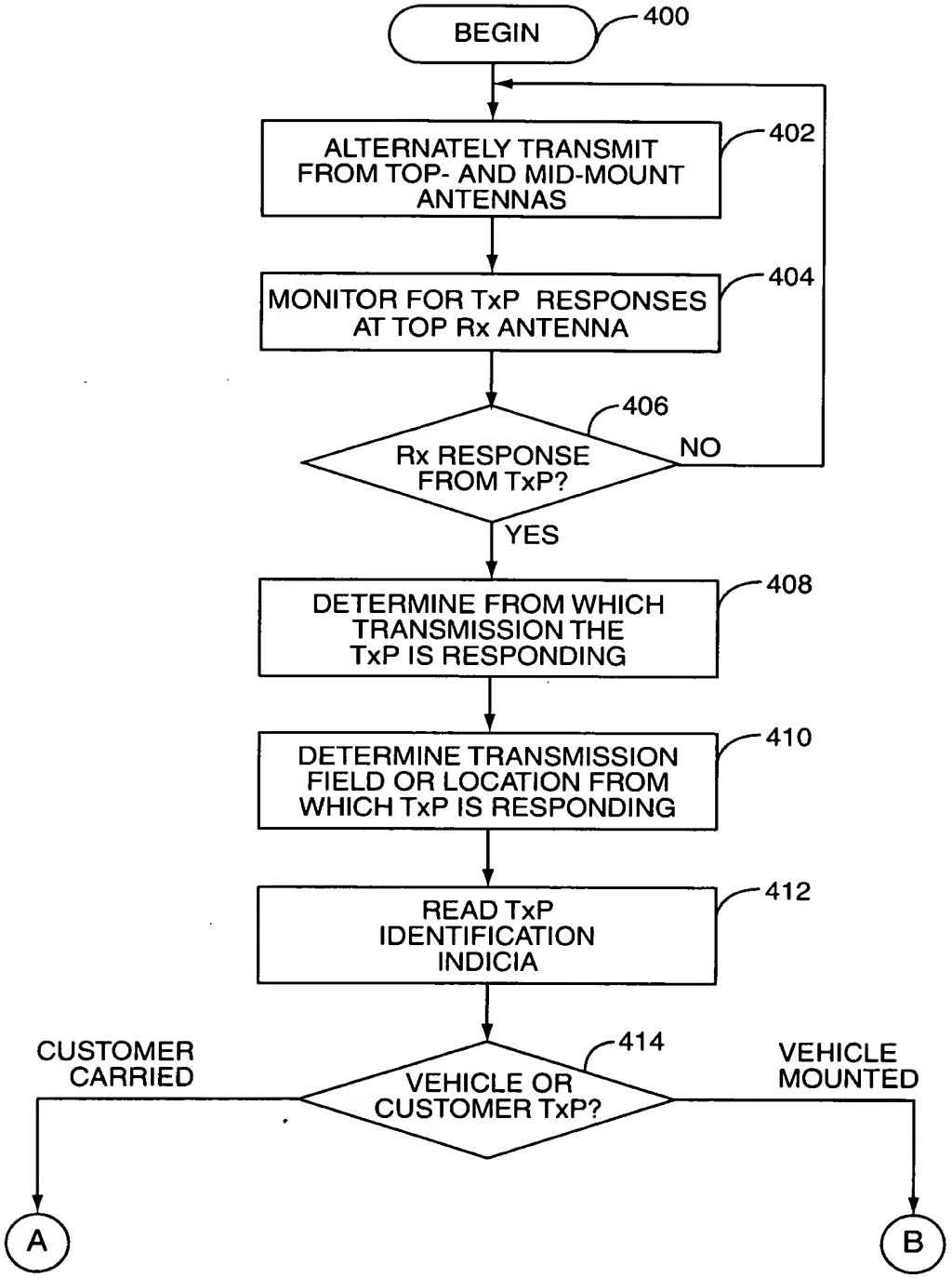
BEGIN
400
ALTERNATELY TRANSMIT FROM TOP- AND MID-MOUNT ANTENNAS
402
MONITOR FOR TxP RESPONSES AT TOP Rx ANTENNA
404
Rx RESPONSE FROM TxP?
406
NO
YES
DETERMINE FROM WHICH TRANSMISSION THE TxP IS RESPONDING
408
DETERMINE TRANSMISSION FIELD OR LOCATION FROM WHICH TxP IS RESPONDING
410
READ TxP IDENTIFICATION INDICIA
412
VEHICLE OR CUSTOMER TxP?
414
CUSTOMER CARRIED
VEHICLE MOUNTED
A
B

*FIG. 12C*

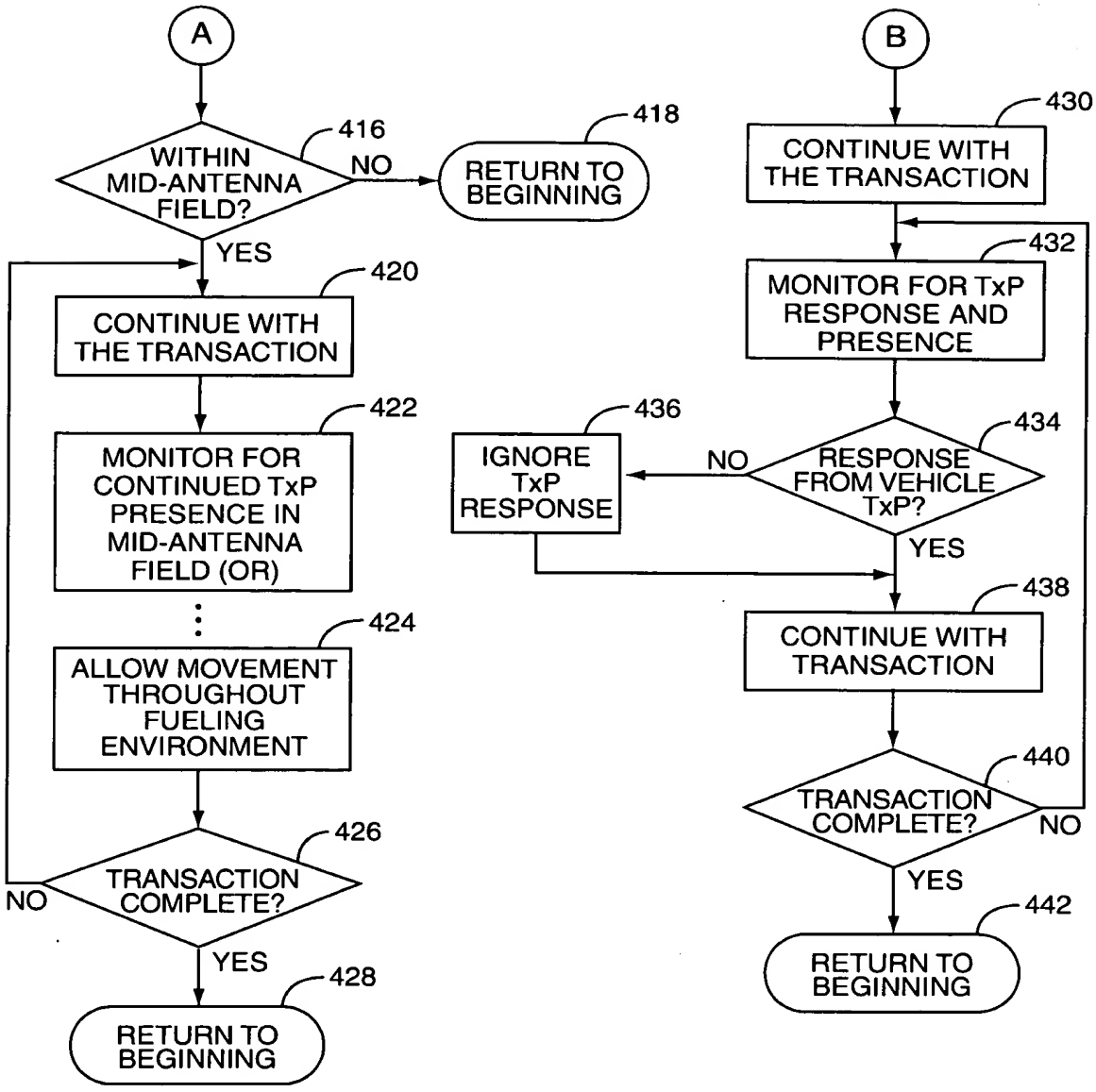
A
WITHIN MID-ANTENNA FIELD?
416
NO
RETURN TO BEGINNING
418
YES
CONTINUE WITH THE TRANSACTION
420
MONITOR FOR CONTINUED TxP PRESENCE IN MID-ANTENNA FIELD (OR)
422
ALLOW MOVEMENT THROUGHOUT FUELING ENVIRONMENT
424
TRANSACTION COMPLETE?
426
NO
YES
RETURN TO BEGINNING
428
B
CONTINUE WITH THE TRANSACTION
430
MONITOR FOR TxP RESPONSE AND PRESENCE
432
RESPONSE FROM VEHICLE TxP?
434
NO
IGNORE TxP RESPONSE
436
YES
CONTINUE WITH TRANSACTION
438
TRANSACTION COMPLETE?
440
NO
YES
RETURN TO BEGINNING
442

*FIG. 12D*

TOETHO: T2E2E60

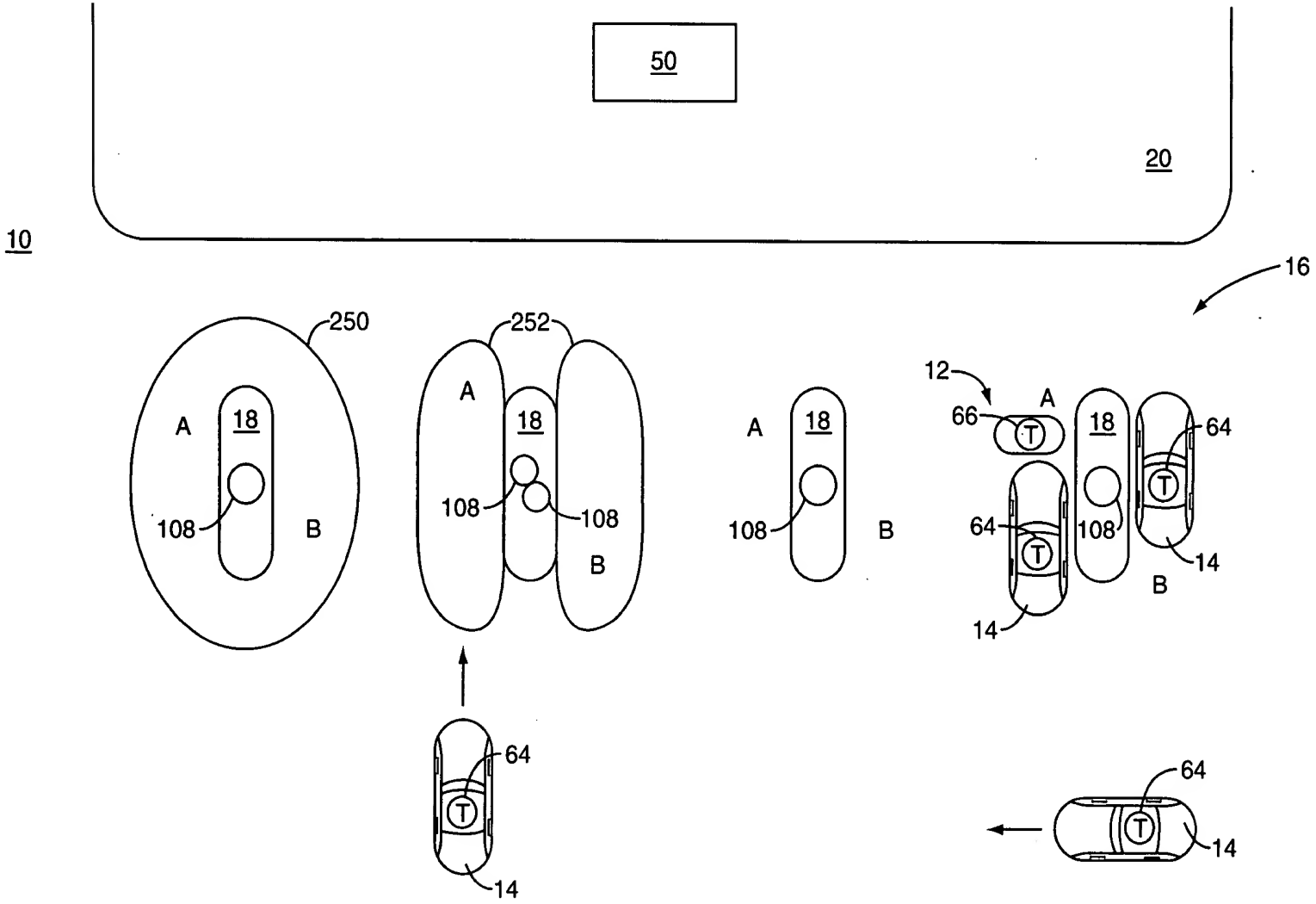


*FIG. 13A*

FOETHO T2E2E260

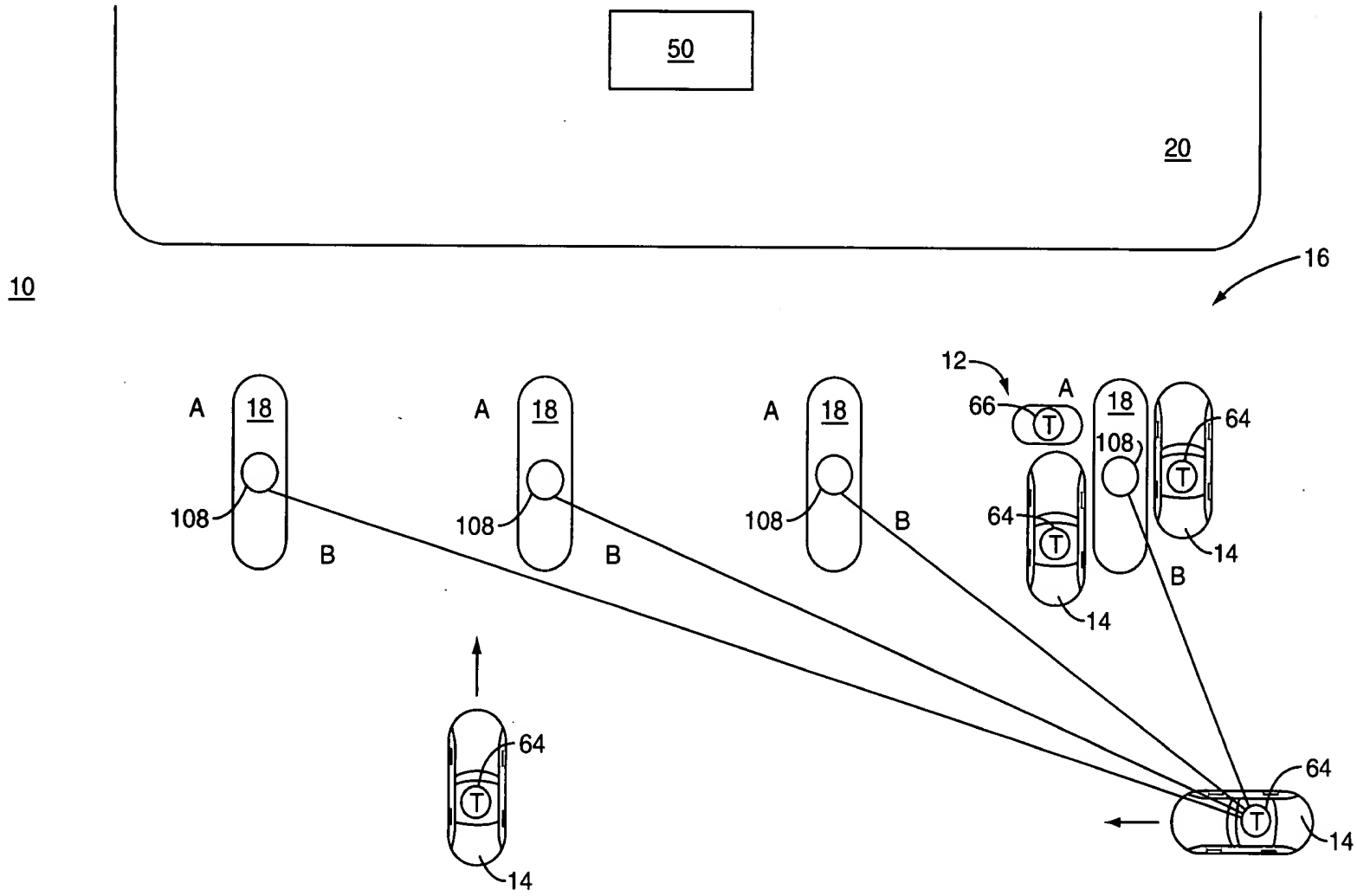


*FIG. 13B*

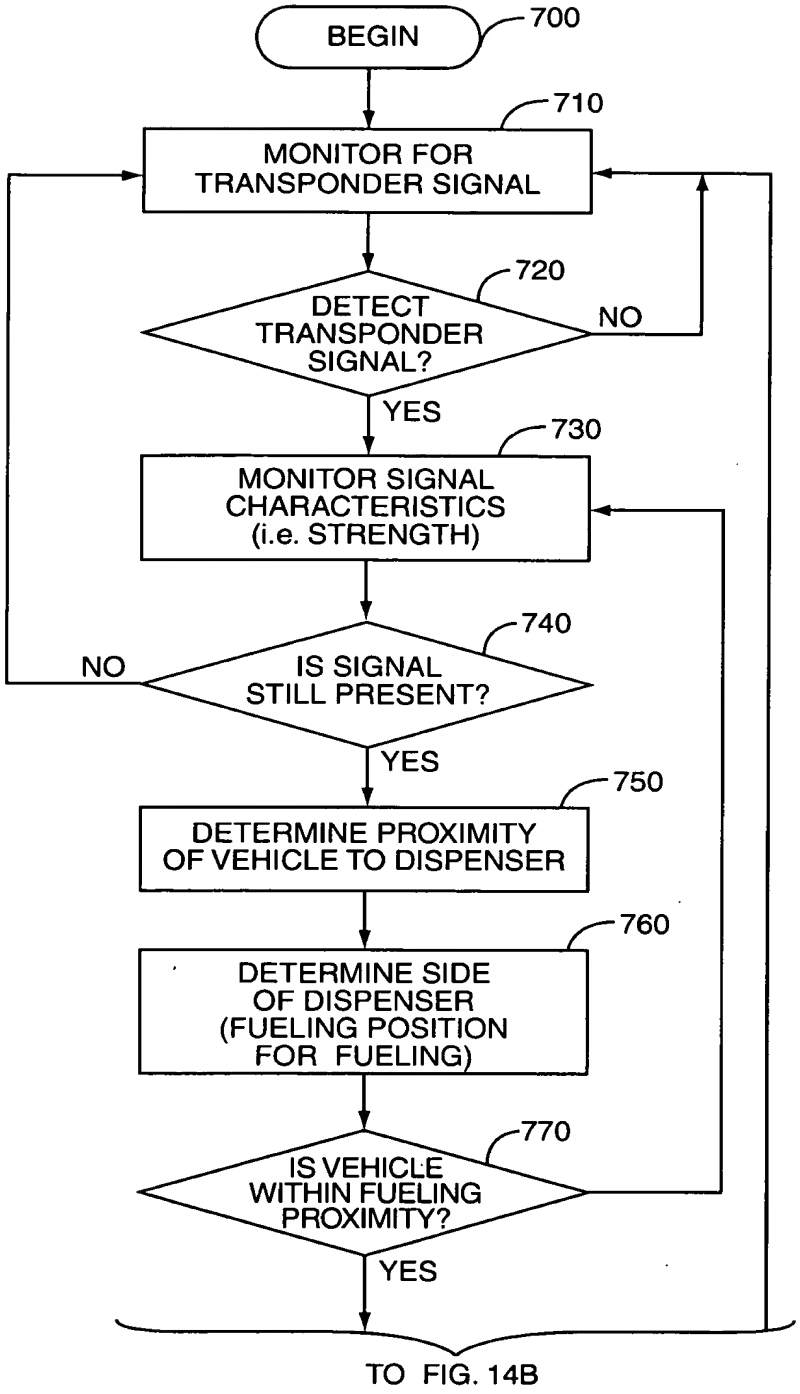
BEGIN
700
MONITOR FOR TRANSPONDER SIGNAL
710
DETECT TRANSPONDER SIGNAL?
720
NO
YES
MONITOR SIGNAL CHARACTERISTICS (i.e. STRENGTH)
730
IS SIGNAL STILL PRESENT?
740
NO
YES
DETERMINE PROXIMITY OF VEHICLE TO DISPENSER
750
DETERMINE SIDE OF DISPENSER (FUELING POSITION FOR FUELING)
760
IS VEHICLE WITHIN FUELING PROXIMITY?
770
YES
TO FIG. 14B

*FIG. 14A*

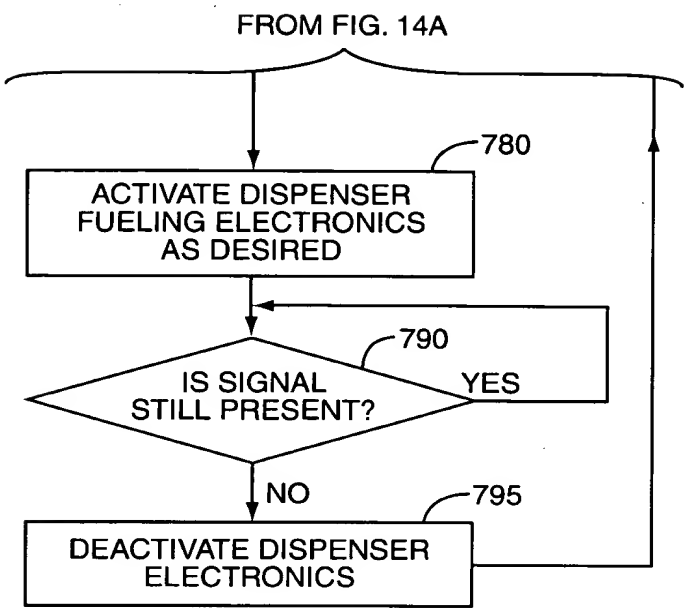
FROM FIG. 14A
780
ACTIVATE DISPENSER FUELING ELECTRONICS AS DESIRED
790
IS SIGNAL STILL PRESENT?
YES
NO
795
DEACTIVATE DISPENSER ELECTRONICS

*FIG. 14B*

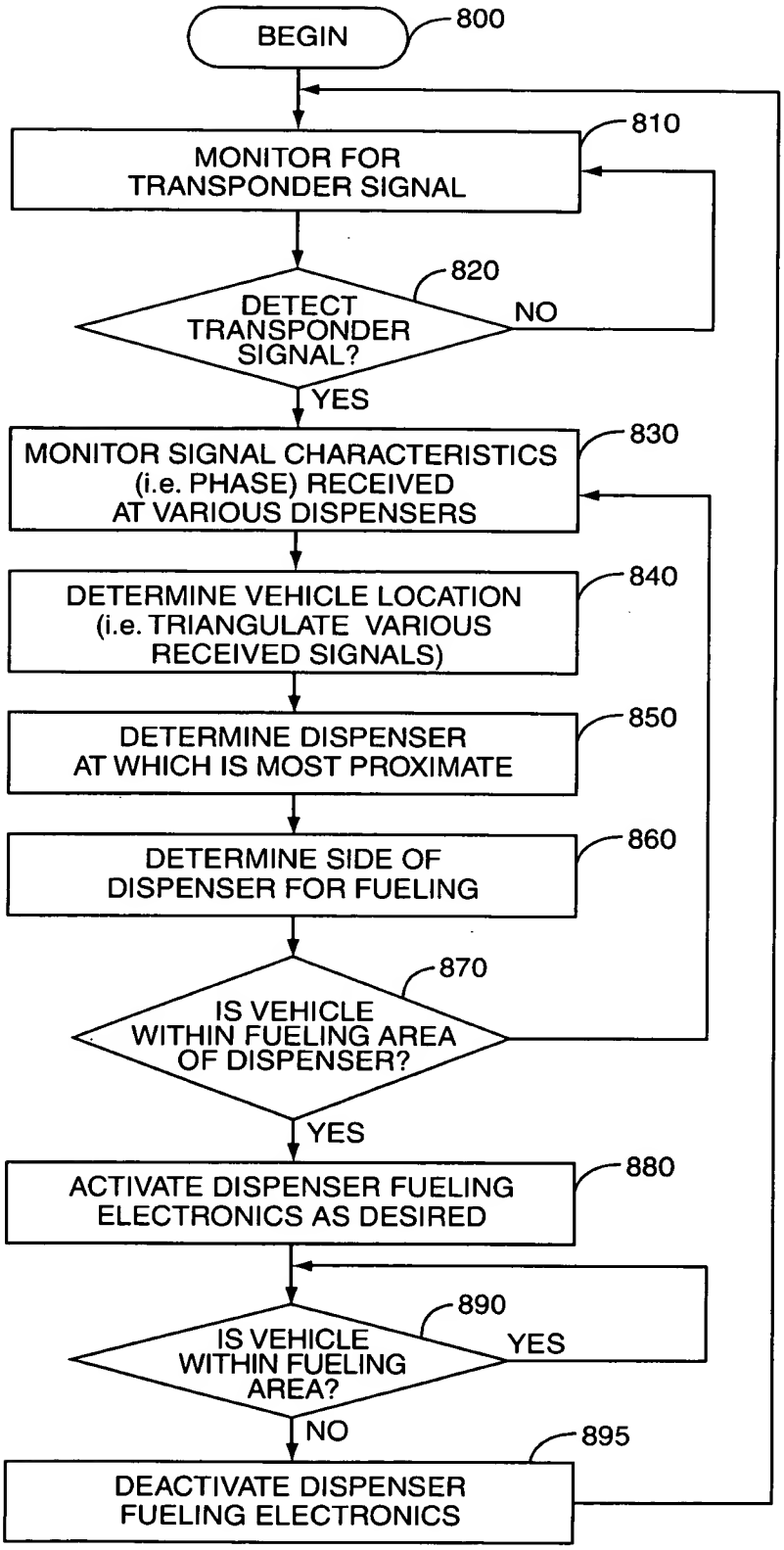
BEGIN
800
MONITOR FOR TRANSPONDER SIGNAL
810
DETECT TRANSPONDER SIGNAL?
820
NO
YES
MONITOR SIGNAL CHARACTERISTICS (i.e. PHASE) RECEIVED AT VARIOUS DISPENSERS
830
DETERMINE VEHICLE LOCATION (i.e. TRIANGULATE VARIOUS RECEIVED SIGNALS)
840
DETERMINE DISPENSER AT WHICH IS MOST PROXIMATE
850
DETERMINE SIDE OF DISPENSER FOR FUELING
860
IS VEHICLE WITHIN FUELING AREA OF DISPENSER?
870
YES
ACTIVATE DISPENSER FUELING ELECTRONICS AS DESIRED
880
IS VEHICLE WITHIN FUELING AREA?
890
YES
NO
DEACTIVATE DISPENSER FUELING ELECTRONICS
895

*FIG. 15*

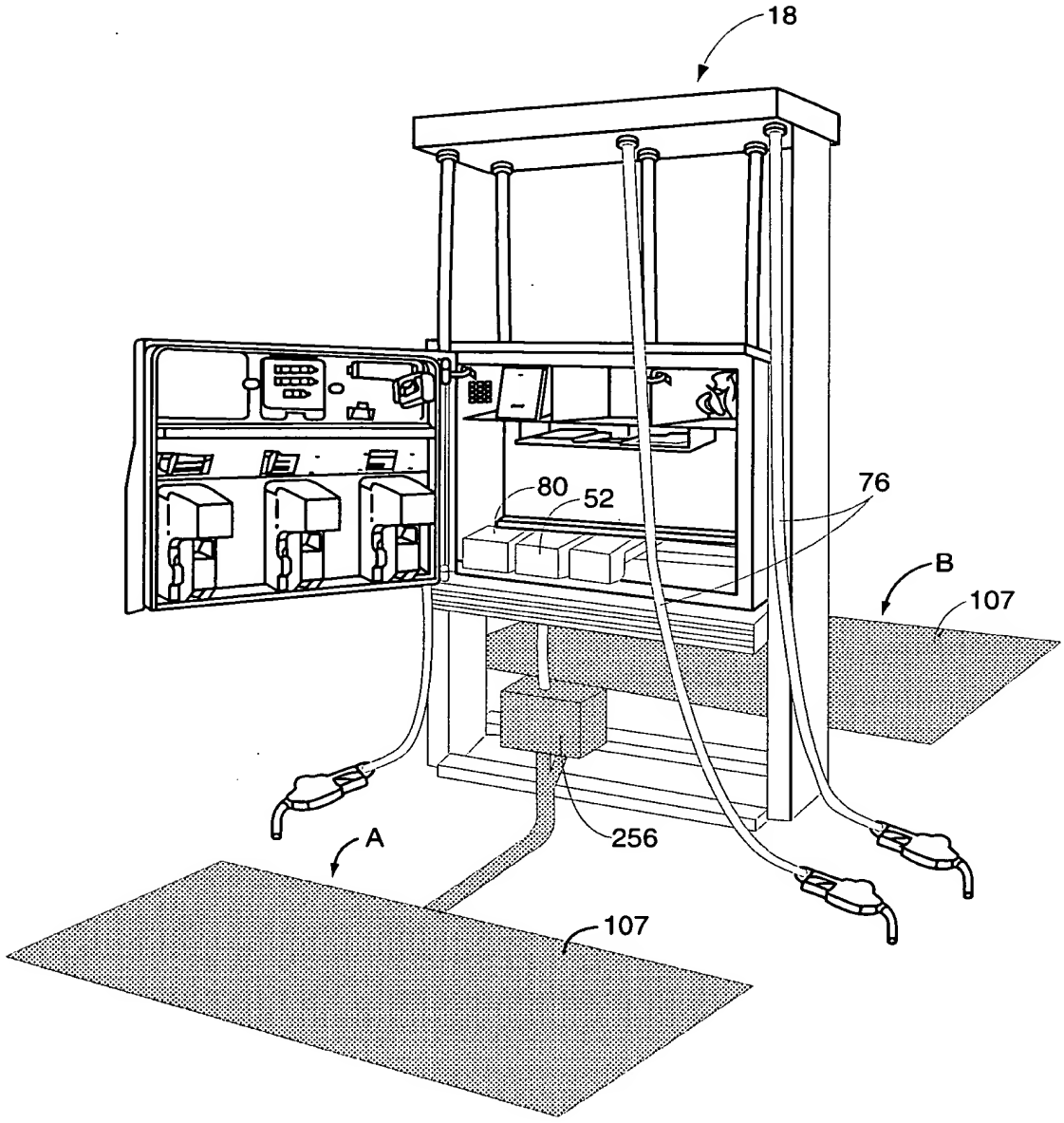


*FIG. 16*

TOETHO" T3E2E60

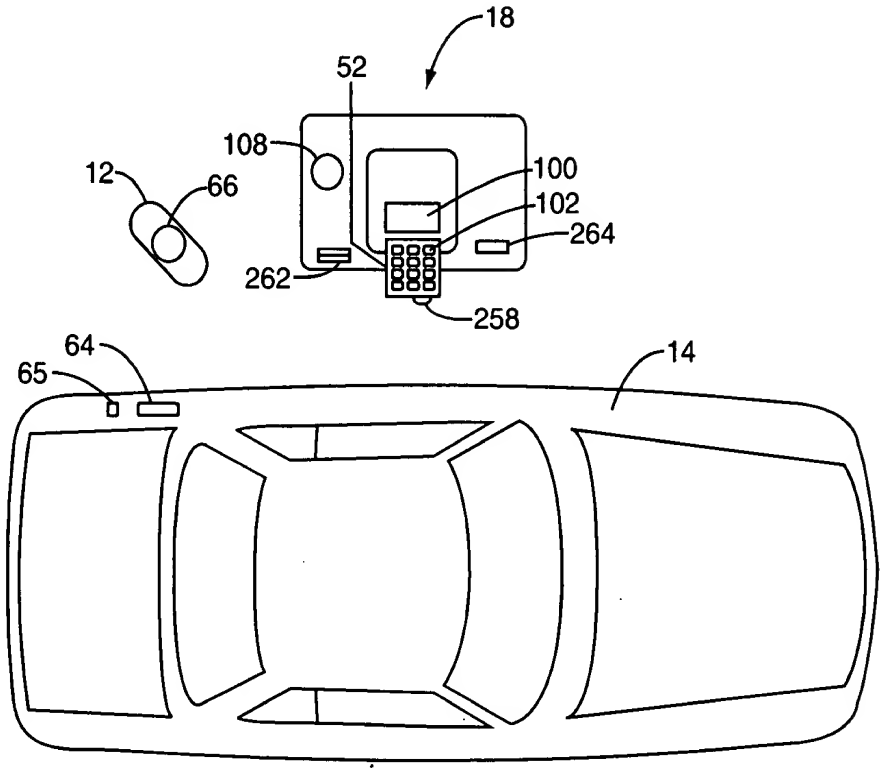


*FIG. 17*

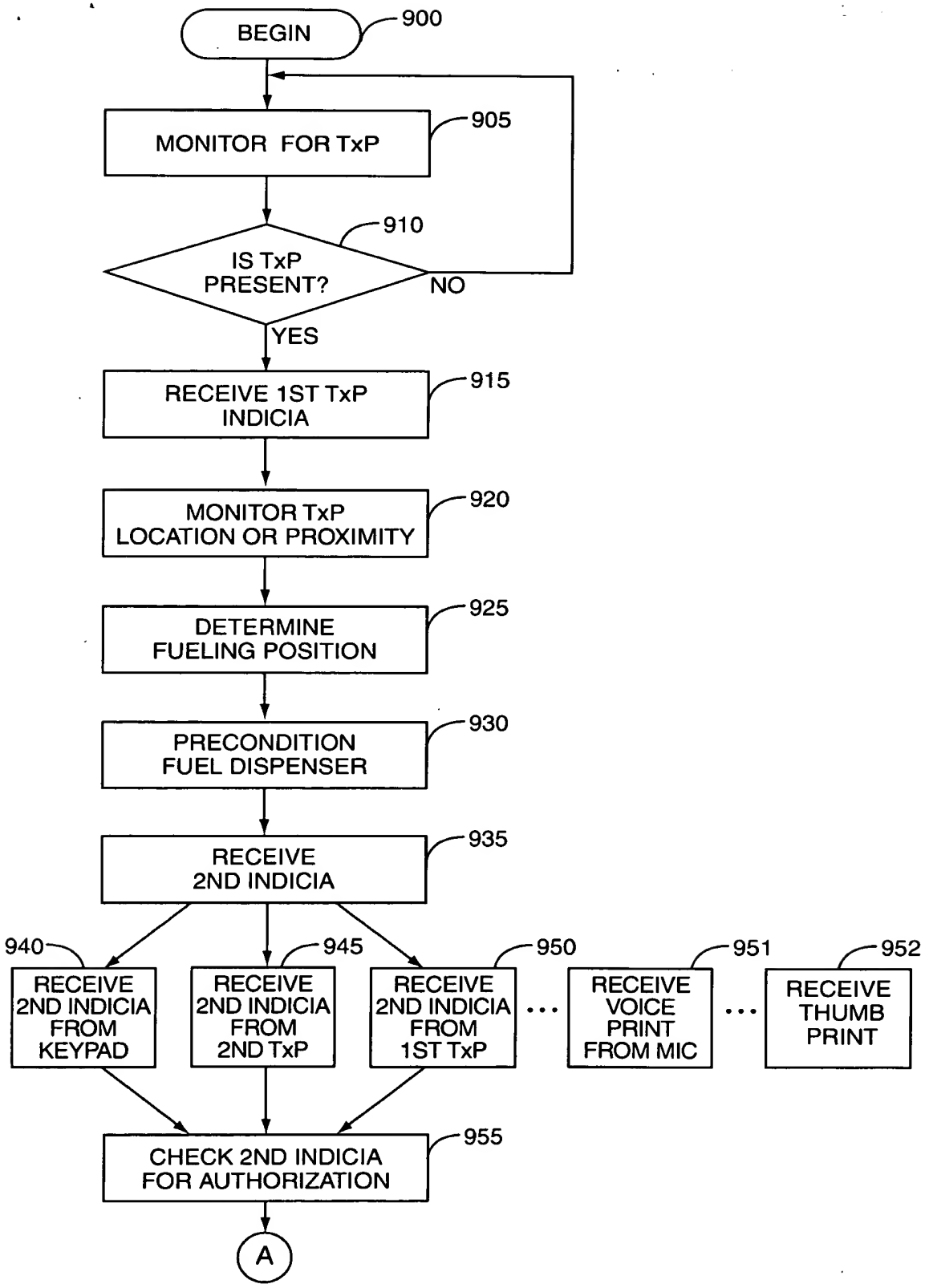
BEGIN
900
MONITOR FOR TxP
905
IS TxP PRESENT?
910
NO
YES
RECEIVE 1ST TxP INDICIA
915
MONITOR TxP LOCATION OR PROXIMITY
920
DETERMINE FUELING POSITION
925
PRECONDITION FUEL DISPENSER
930
RECEIVE 2ND INDICIA
935
940
RECEIVE 2ND INDICIA FROM KEYPAD
945
RECEIVE 2ND INDICIA FROM 2ND TxP
950
RECEIVE 2ND INDICIA FROM 1ST TxP
951
RECEIVE VOICE PRINT FROM MIC
952
RECEIVE THUMB PRINT
CHECK 2ND INDICIA FOR AUTHORIZATION
955
A

*FIG. 18A*

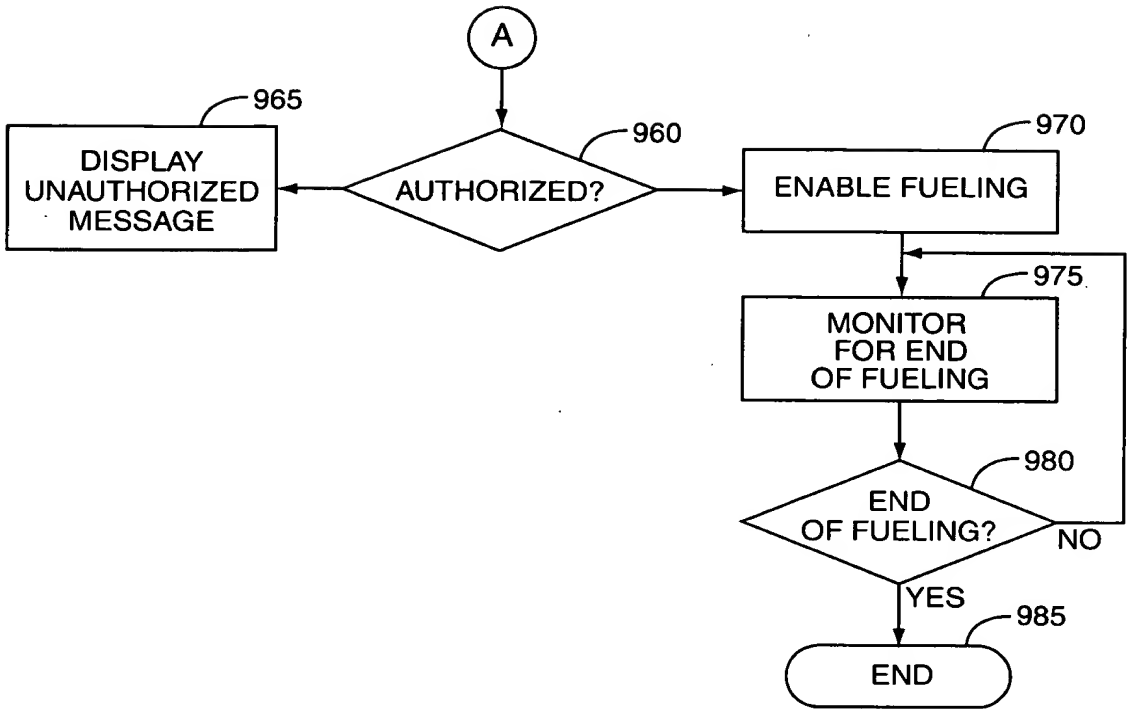
A
965
DISPLAY UNAUTHORIZED MESSAGE
960
AUTHORIZED?
970
ENABLE FUELING
975
MONITOR FOR END OF FUELING
980
END OF FUELING?
NO
YES
985
END

*FIG. 18B*

TOETHO "T2E2E260

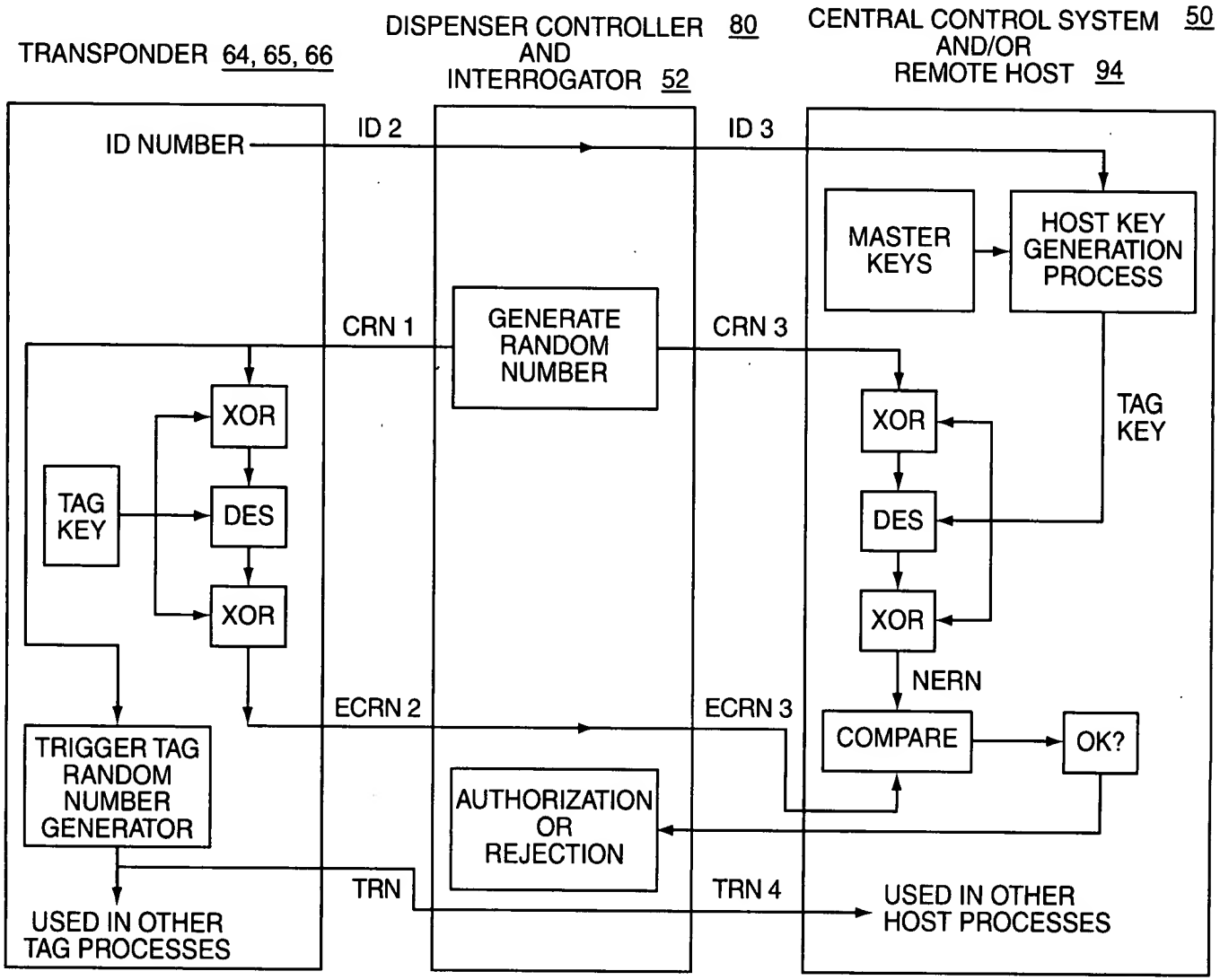


*FIG. 19*

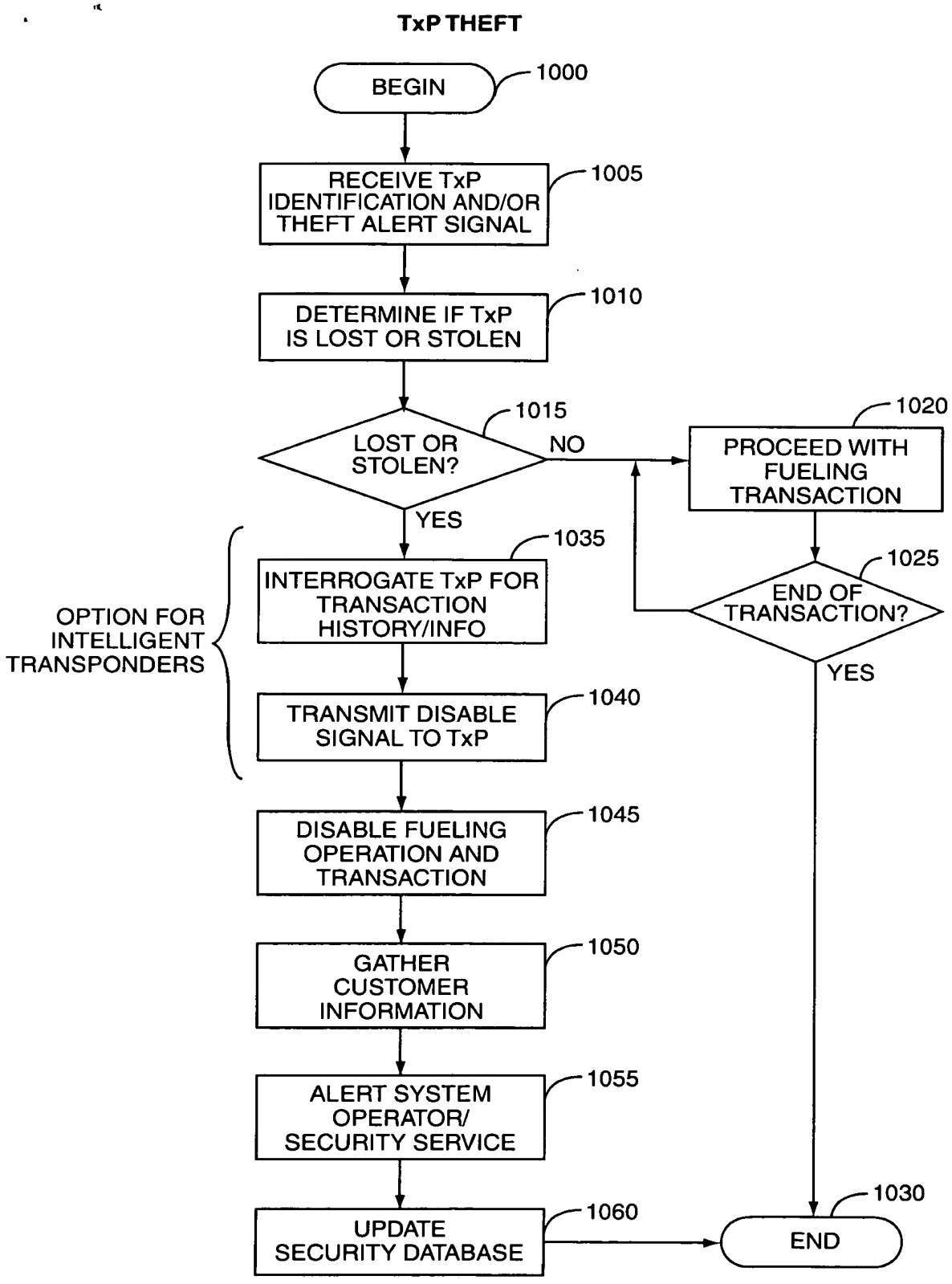
TxP THEFT
BEGIN
1000
RECEIVE TxP IDENTIFICATION AND/OR THEFT ALERT SIGNAL
1005
DETERMINE IF TxP IS LOST OR STOLEN
1010
LOST OR STOLEN?
1015
NO
PROCEED WITH FUELING TRANSACTION
1020
YES
OPTION FOR INTELLIGENT TRANSPONDERS
INTERROGATE TxP FOR TRANSACTION HISTORY/INFO
1035
END OF TRANSACTION?
1025
YES
TRANSMIT DISABLE SIGNAL TO TxP
1040
DISABLE FUELING OPERATION AND TRANSACTION
1045
GATHER CUSTOMER INFORMATION
1050
ALERT SYSTEM OPERATOR/ SECURITY SERVICE
1055
UPDATE SECURITY DATABASE
1060
END
1030

*FIG. 20*

**DRIVE-OFF**

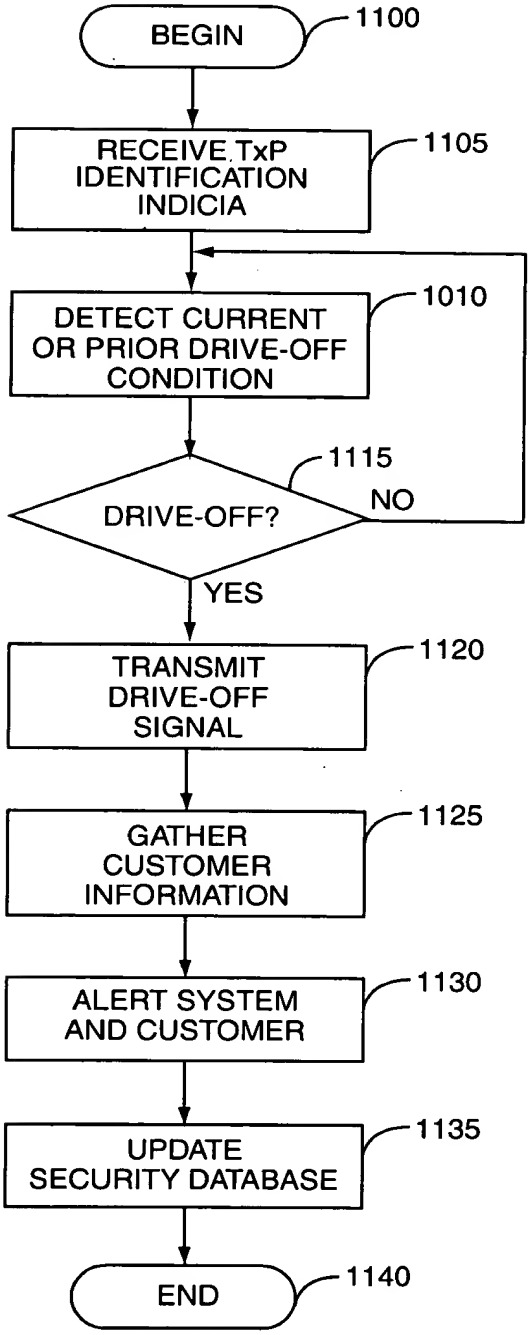


*FIG. 21*

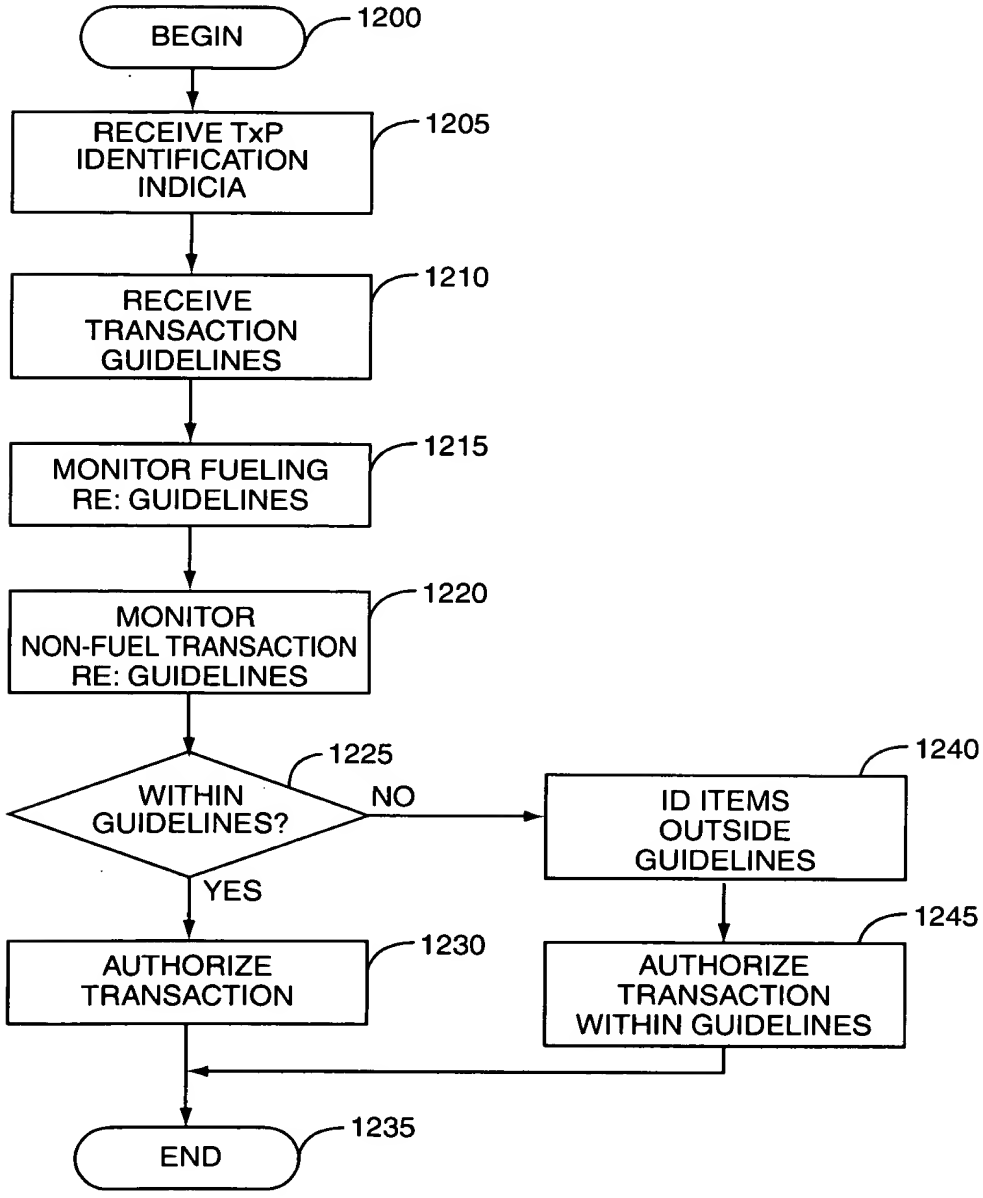
BEGIN
1200
RECEIVE TxP IDENTIFICATION INDICIA
1205
RECEIVE TRANSACTION GUIDELINES
1210
MONITOR FUELING RE: GUIDELINES
1215
MONITOR NON-FUEL TRANSACTION RE: GUIDELINES
1220
WITHIN GUIDELINES?
1225
NO
YES
ID ITEMS OUTSIDE GUIDELINES
1240
AUTHORIZE TRANSACTION
1230
AUTHORIZE TRANSACTION WITHIN GUIDELINES
1245
END
1235

*FIG. 22*

FOREIGN PATENT

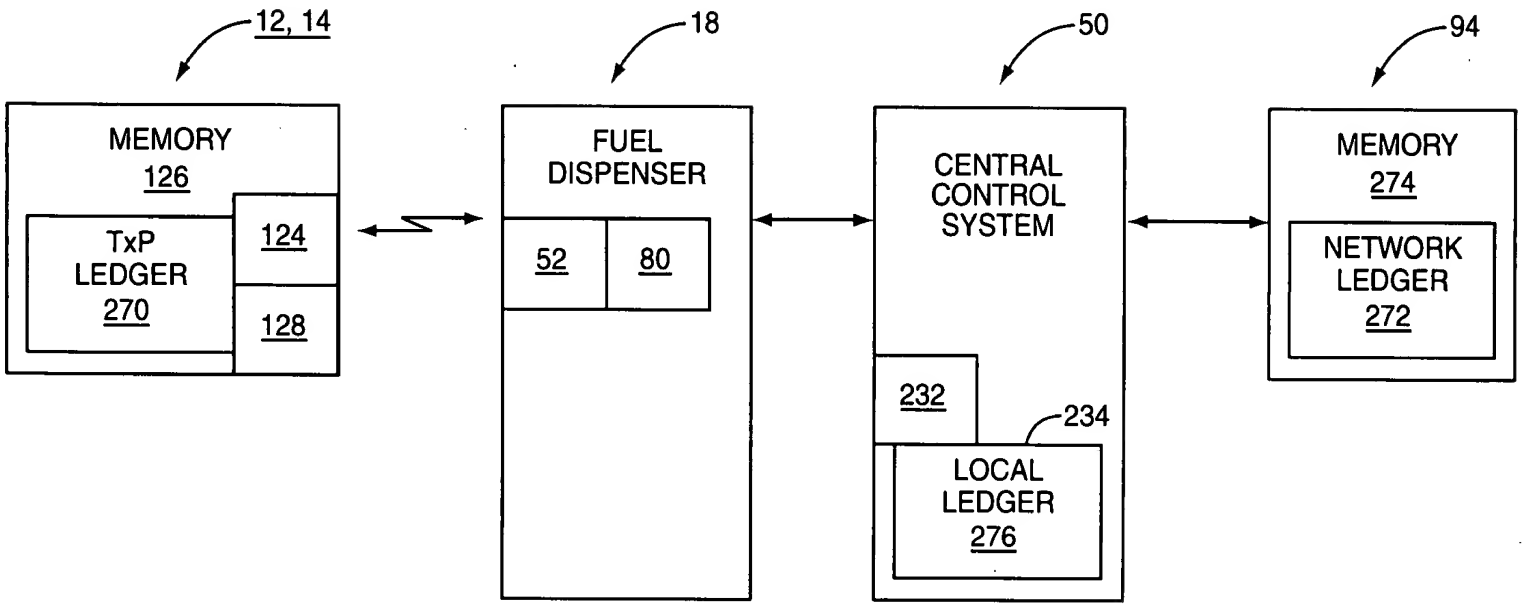


*FIG. 23*

**CREATING A SHADOW LEDGER**

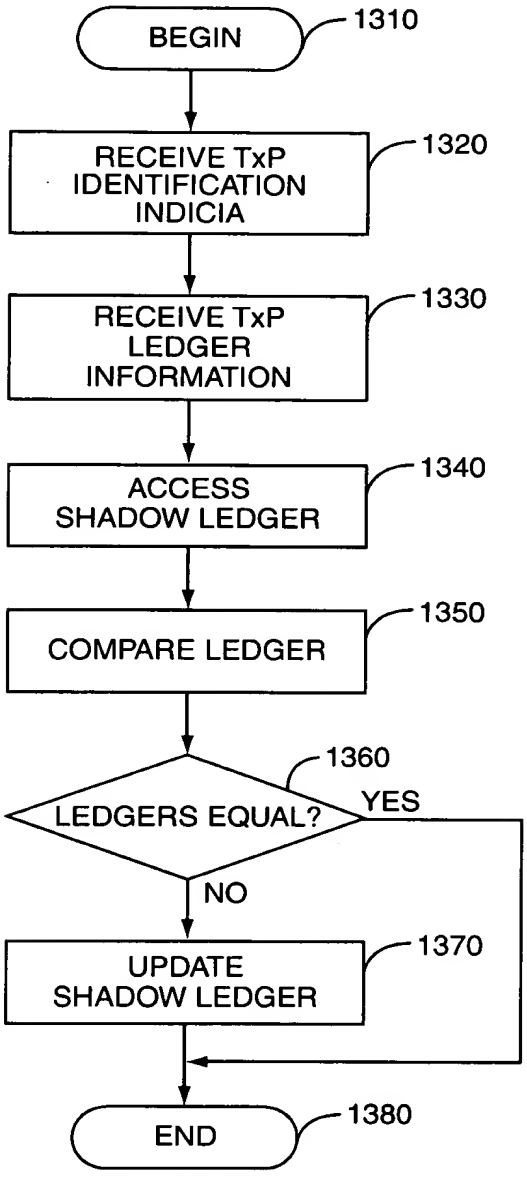


*FIG. 24*

**TRANSACTION TRACKING**

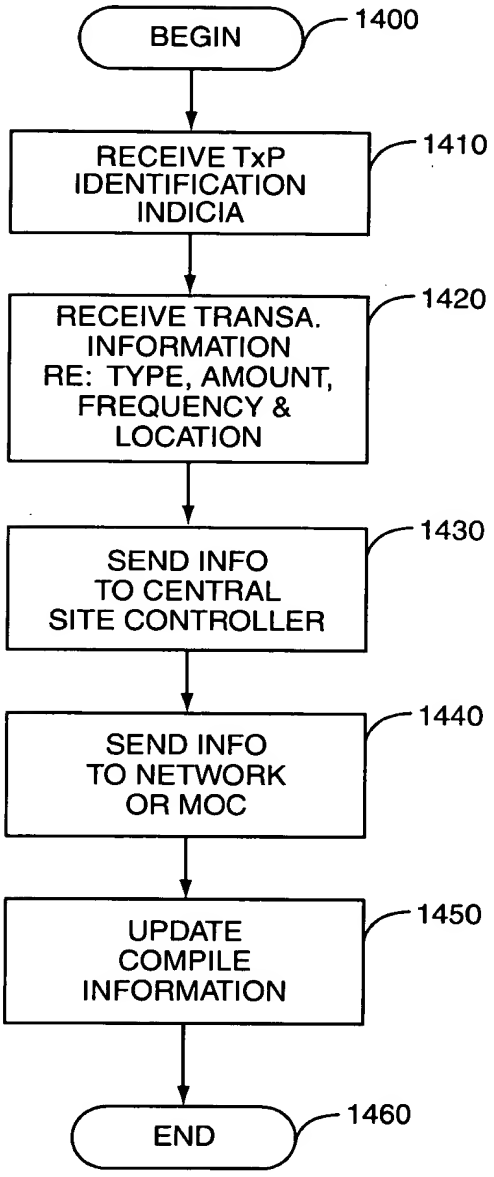


*FIG. 25*

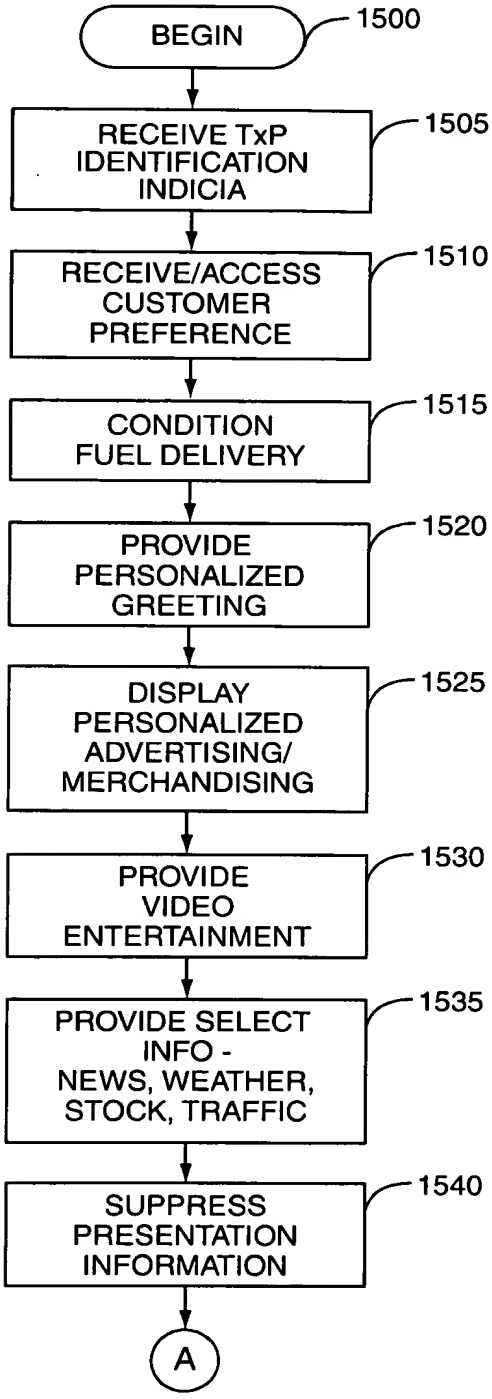
BEGIN
1500
RECEIVE TxP IDENTIFICATION INDICIA
1505
RECEIVE/ACCESS CUSTOMER PREFERENCE
1510
CONDITION FUEL DELIVERY
1515
PROVIDE PERSONALIZED GREETING
1520
DISPLAY PERSONALIZED ADVERTISING/ MERCHANDISING
1525
PROVIDE VIDEO ENTERTAINMENT
1530
PROVIDE SELECT INFO - NEWS, WEATHER, STOCK, TRAFFIC
1535
SUPPRESS PRESENTATION INFORMATION
1540
A

*FIG. 26A*

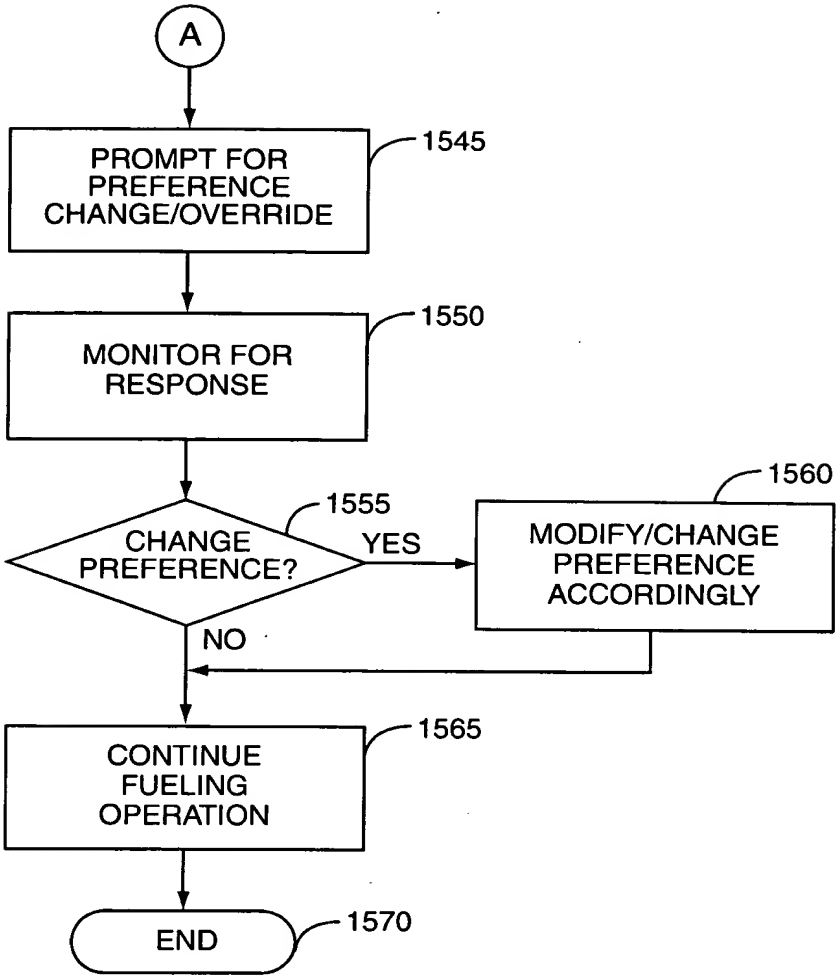
A
PROMPT FOR PREFERENCE CHANGE/OVERRIDE
1545
MONITOR FOR RESPONSE
1550
CHANGE PREFERENCE?
1555
YES
MODIFY/CHANGE PREFERENCE ACCORDINGLY
1560
NO
CONTINUE FUELING OPERATION
1565
END
1570

*FIG. 26B*

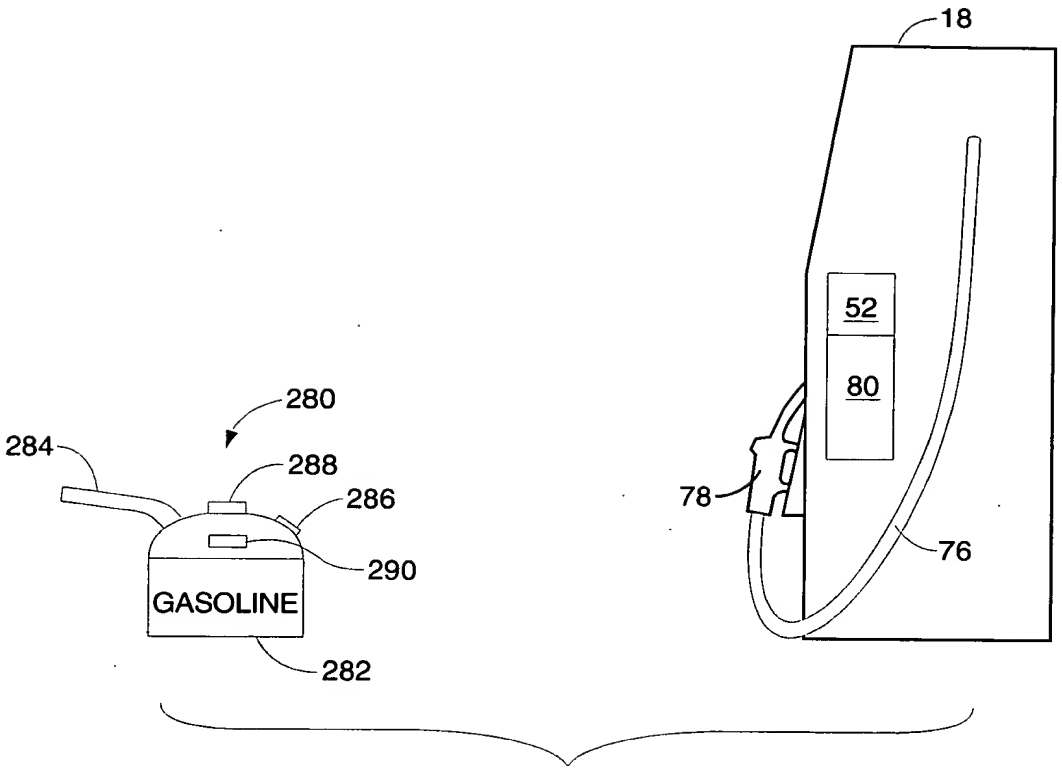


*FIG. 27*

PREVENTING UNAUTHORIZED CONTAINER FUELING

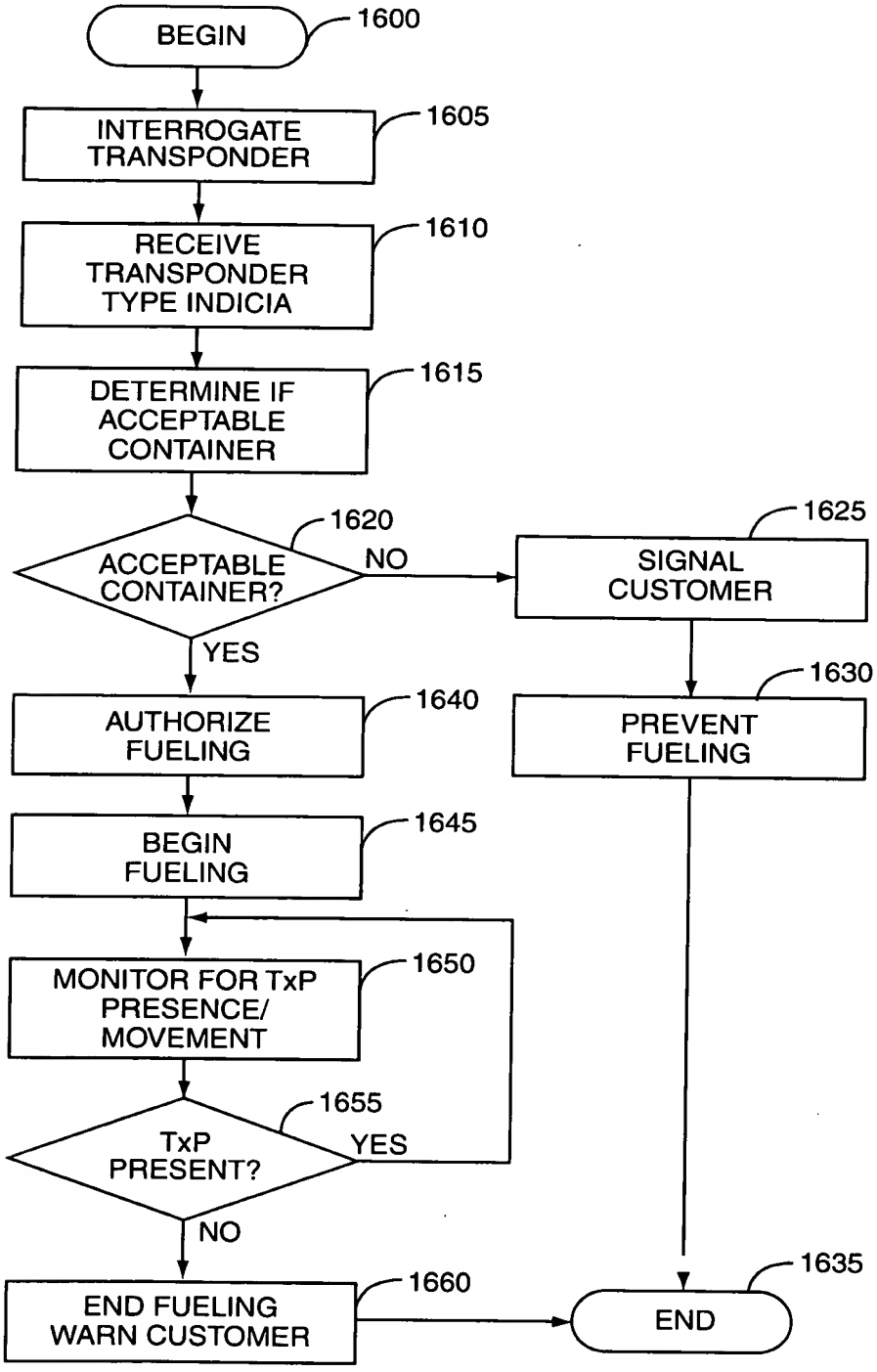


*FIG. 28*

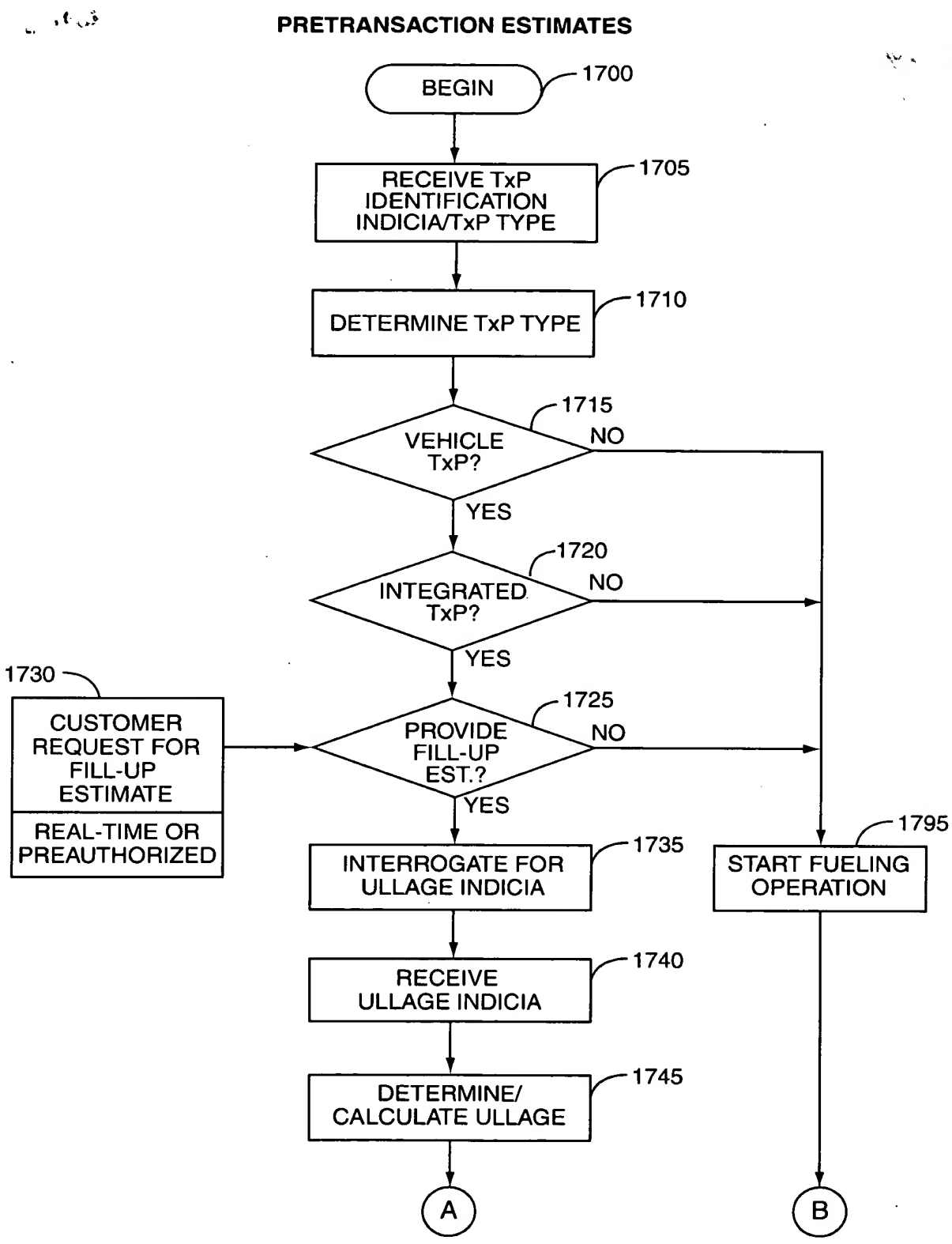
PRETRANSACTION ESTIMATES
BEGIN
1700
RECEIVE TxP IDENTIFICATION INDICIA/TxP TYPE
1705
DETERMINE TxP TYPE
1710
VEHICLE TxP?
1715
NO
YES
INTEGRATED TxP?
1720
NO
YES
1730
CUSTOMER REQUEST FOR FILL-UP ESTIMATE
REAL-TIME OR PREAUTHORIZED
PROVIDE FILL-UP EST.?
1725
NO
YES
INTERROGATE FOR ULLAGE INDICIA
1735
RECEIVE ULLAGE INDICIA
1740
DETERMINE/ CALCULATE ULLAGE
1745
START FUELING OPERATION
1795
A
B

*FIG. 29A*

ULLAGE BASED CASH ACCEPTOR CONTROL

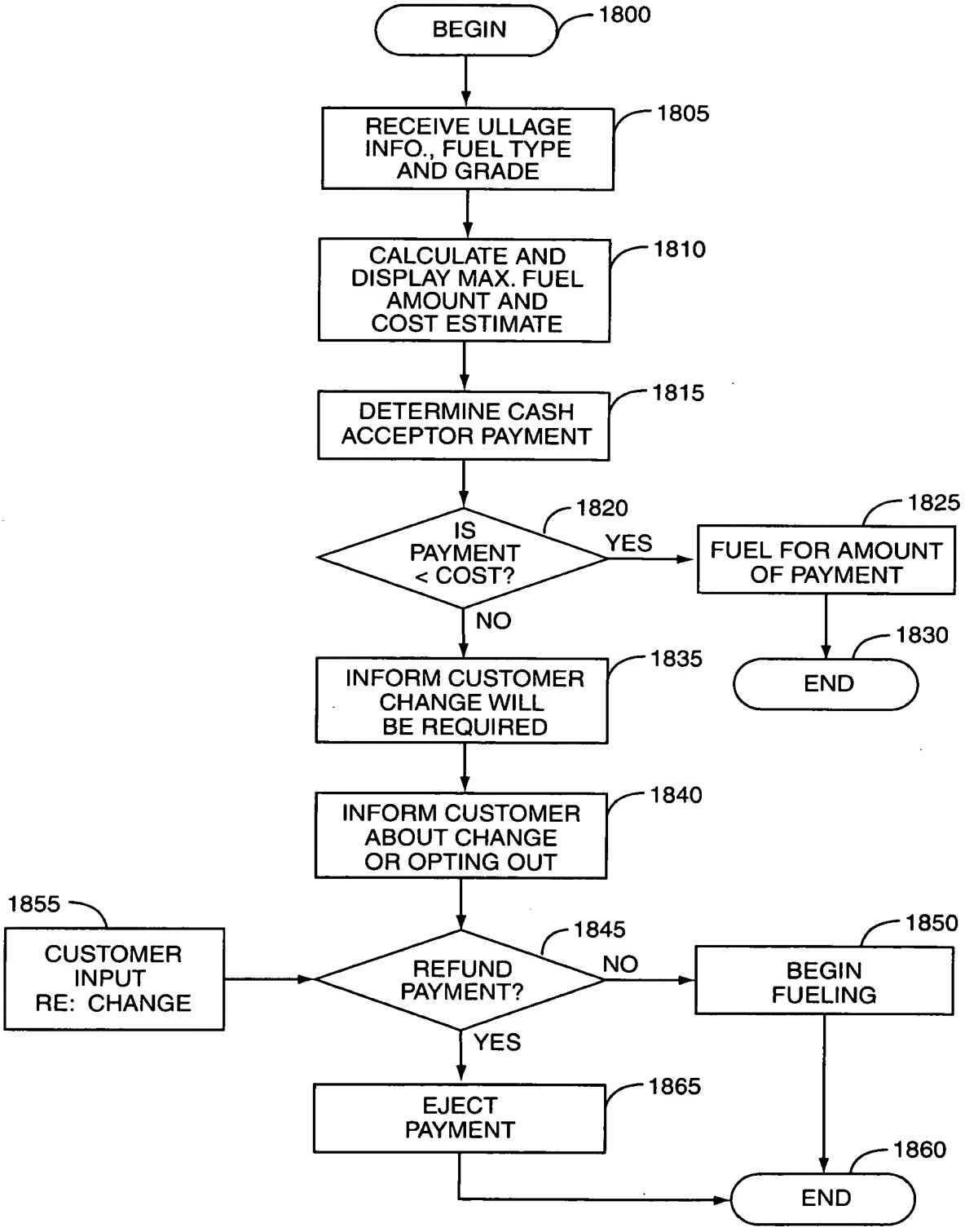


*FIG. 30*

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| No. | Doccode | Number of pages |
|---|---|---|
| 1 | A... | 2 |
| 2 | REM | 6 |

Total number of pages: 8

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